

## Notes on the Planning of Sanatoria, Infectious Diseases Hospitals, and other Public Health Institutions

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### I. INTRODUCTORY.

THE problem that confronts the architect in dealing with hospitals and kindred public health institutions is how to make the structural life of the building coincide with its useful life.

Owing to the rapid change of medical opinion as to the methods of treating disease and to the constant upward tendency of standards of sanitation, heating, lighting, ventilation, etc., it is not uncommon for comparatively modern buildings that are still good structurally to be out of date. For these reasons the architect is now required to design a public health institution on such simple lines that future alterations can be carried out at a minimum of expenditure. As long as the architect can construct a building that will be weather-proof and comfortable and can be maintained at a moderate cost during the length of its useful life, he is entitled to reduce the initial cost even at the sacrifice of durability. There is further the general need for economy in public expenditure. The heavy financial indebtedness of public bodies, the high initial cost of building and the annual expenditure in maintenance and administration will compel local authorities for years to come to erect only the cheapest possible structures compatible with efficiency.

In mining areas a special consideration operates. Where on account of underground workings it is almost impossible to obtain a firm foundation, it is necessary to erect a building as light in construction as possible, not only to prevent the foundations from

subsiding, but to avoid undue loss in the event of the hospital ultimately becoming uninhabitable. In mining districts, too, the incidence of population fluctuates, and often after the life of a mine has expired the people leave the district. But the effect of this on the uses of an institution is nowadays neutralised to a great extent by the use of the motor ambulance.

The tendency in health administration is towards the establishment of much larger public health areas than at present exist. The effect of this will be that public health institutions will be located in or in the neighbourhood of centres of permanent population rather than in smaller and isolated districts.

**SITUATION.**—In considering the important matter of the site, the following conditions should be kept in view:—

- (1) Where possible a site of good elevation in relation to the surrounding country should be selected, with, especially in the case of sanatoria, a southern aspect and the ground sloping to the south.
- (2) The site should have a dry subsoil.
- (3) Protection from the prevailing cold winds should be obtained.
- (4) Where available, public water supply and sewers should be used; if not, a sufficient water supply should be provided and arrangements made to dispose of the sewage without causing nuisance by sewage works.

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- (5) The site should be conveniently accessible to a railway station and main roads, and should where possible and practicable be central for the population and area which the institution is to serve.
- (6) A larger site than is necessary for the original requirements should be obtained in order to permit of any future extensions.

**BUILDINGS.**—In considering the planning of the buildings it should be remembered that the primary reason for the existence of public health institutions is the treatment of sick persons in such a manner as to ensure early convalescence. Every factor that can increase the efficiency of the institution in this respect must be given the fullest consideration. The saving of unnecessary work for the staff, the placing of utility rooms so that patients in the wards are not disturbed by frequent noises, the provision of efficient lighting and ventilation, and the creation of a sense of comfort by well-considered internal finish, are all factors in planning that favourably influence both patients and staff and add to the efficiency of the institution.

In planning these buildings the architect as well as the doctor must never forget the human side of the patient. A well-known authority has stated that the two essentials of planning are the comfort of the patient and the accessibility of service. I shall now deal with the various classes of institutions in detail, and particularly with those under the control of Local Authorities in Scotland.

### II. SANATORIA.

A number of sanatoria have already been erected in various parts of Scotland. Some consist of entirely new buildings placed on a virgin site, but for others an estate with an existing mansion house has been used. The mansion house, as a rule, has been converted for use as an administrative block, but it is questionable whether this arrangement has always proved cheaper eventually than where entirely new buildings have been provided.

Some of the larger Local Authorities provide separate institutions for men and women. For several reasons this is desirable, but on the question of cost it cannot be considered where a comparatively small number of beds is required.

I propose to give some general notes on the preparation of the plans. The sanatorium is assumed to be one to provide for 100 patients. The proportion of the various classes of patient must vary according to the needs of each locality, but the accommodation suggested below is based on the supposition that in the majority of sanatoria approximately 20 per cent. of the beds will be for sick or bed patients.

**SITE.**—The site to be acquired should provide from one-third to one-half of an acre of land per patient.

**BUILDINGS.**—The buildings should include the following :—

Pavilions and shelters for patients ; an administrative section, with (a) kitchen, dining-rooms for patients and staff ; stores and other offices ; and (b) staff block, power-house, laundry and wash-house, disinfector, sputum destructor, mortuary, etc., and outdoor staff buildings.

The best aspect for the pavilions is with the ward windows facing south or south-west.

The following points should receive attention :—

#### (1) PAVILIONS FOR PATIENTS.

The nature of the accommodation to be provided depends to a certain extent on the class of case that the sanatorium is intended to accommodate, but, broadly, provision should be made for two main classes :—

(a) Cases requiring little or no treatment in bed, sometimes called "ambulant" cases. This accommodation should take the form of separate pavilions for men, women and children (if children are to be dealt with) respectively.

(b) Cases requiring treatment in bed, sometimes called "bed" patients. This accommodation should take the form of pavilions containing small wards. For children there is not the same call for separate provision. It is usual to keep all newly admitted patients under observation in bed for a week or two for diagnosis and classification. A separate pavilion should be provided for these cases. (Figs. 1 and 2.)

In considering plans in detail, special attention should also be given to the following points :—

(a) *Standard Floor Areas per Bed.*—One-bed wards, 90 superficial feet ; two-bed wards, 80 superficial feet ; four, six, eight and ten-bed wards, 80 superficial feet.

For administrative reasons the number of one-bed wards should be small.

(b) *Height of Ceilings.*—One and two-bed wards, 9 feet ; four, six, eight and ten-bed wards, 9 feet 6 inches to 10 feet.

(c) *Sanitary Accommodation in Pavilion for Ambulant Cases.*—Generally, one spray bath should be provided for, say, ten patients. One slipper bath should be provided in each pavilion for male cases ; but more will require to be provided for female cases, with a corresponding reduction in the number of spray baths. One w.c. for every ten patients. One lavatory basin for every six patients, and a separate basin for the cleaning of teeth.

(d) *Other Accommodation.*—Sink-room with sinks, slunge, and sometimes sputum steriliser ; housemaid's

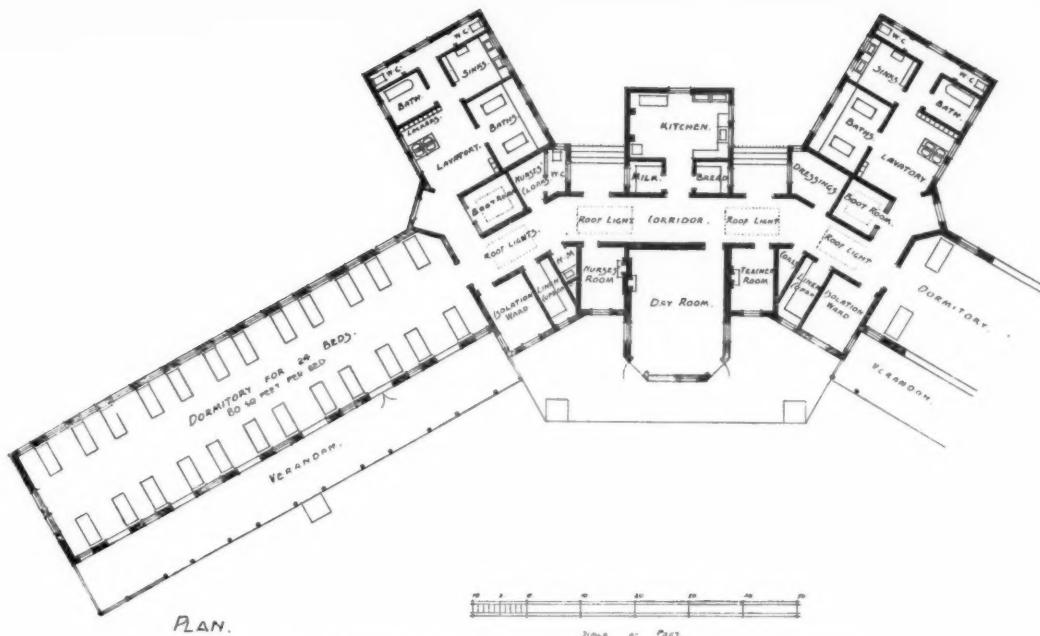


FIG. 1.—50-BED PAVILION FOR CHILDREN, MEARNSKIRK SANATORIUM, GLASGOW

HOSPITAL AND ADMISSION BLOCK. MALE SIDE.

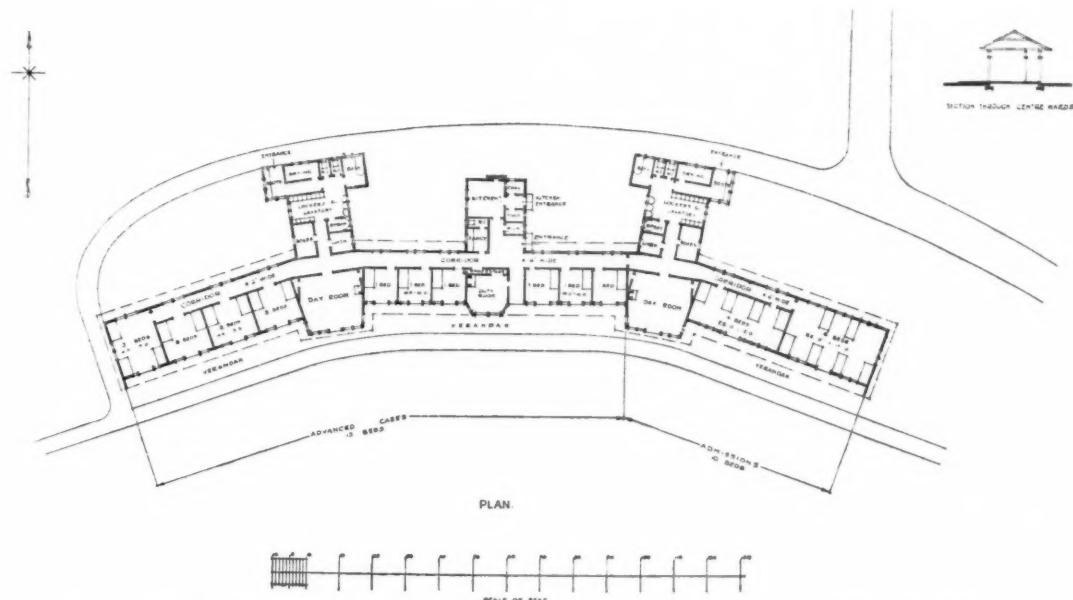


FIG. 2.—DUMFRIES AND GALLOWAY JOINT SANATORIUM. ARCHITECTS : ALEX. CULLEN, LOCKHEAD AND BROWN

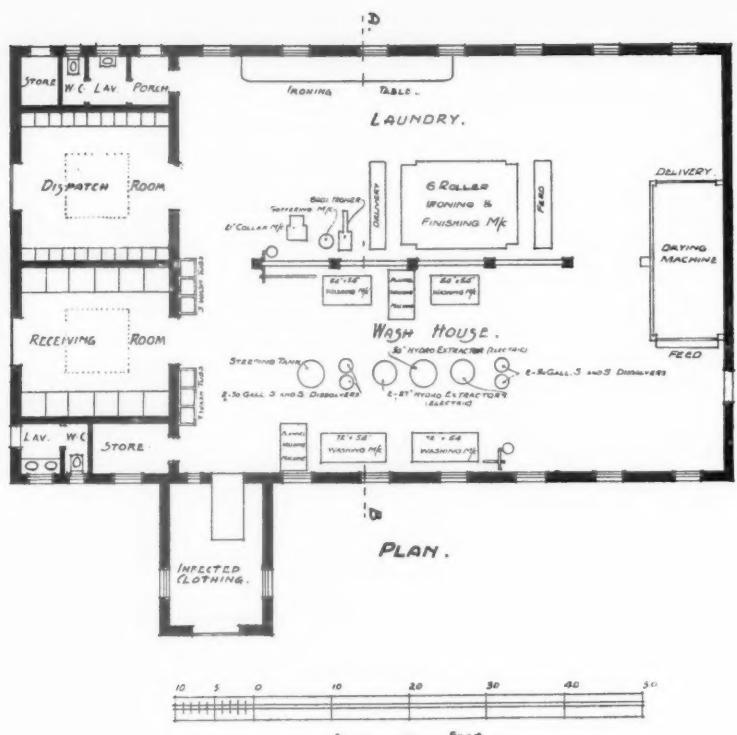


FIG. 3.—LAUNDRY AND WASHHOUSE, MEARNSKIRK SANATORIUM, GLASGOW

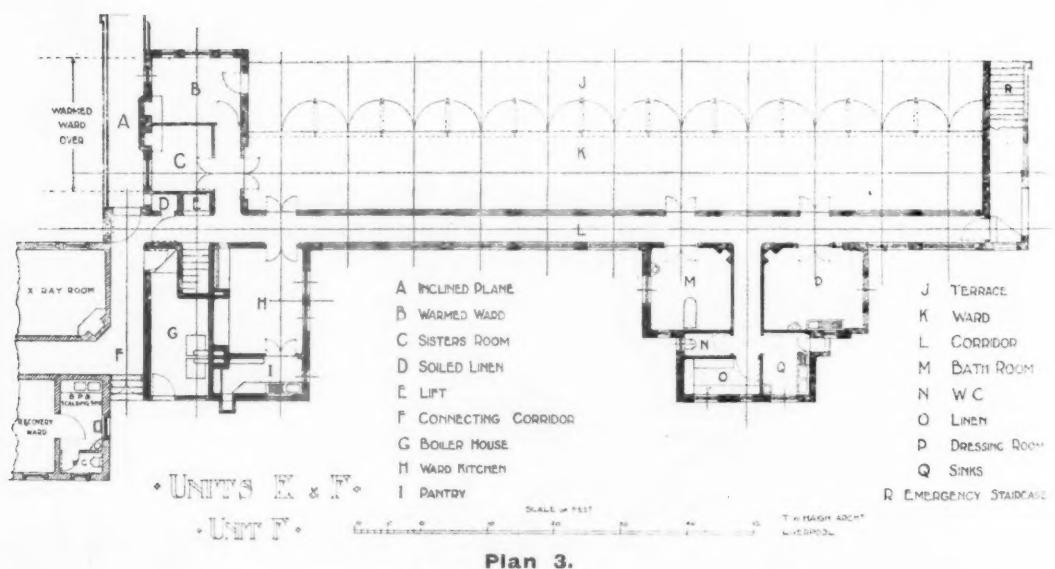


FIG. 4.—THE CHILDREN'S HOSPITAL, LEASOWE, CHESHIRE. PLAN OF PAVILION. ARCHITECT : T. W. HAIGH

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closet with sink and slunge; duty-room or ward kitchen; staff lavatory; locker-rooms for patients' clothes, linen-room, drying-room for patients' clothes, bootroom and boxroom for patients' boxes.

The above remarks apply principally to pavilions for ambulant cases. In a pavilion for bed cases the lavatory accommodation will be reduced considerably, and the locker-room, drying-room and bootroom can be omitted, unless it is intended to use the pavilion occasionally for semi-ambulant as well as bed cases.

(e) *Shelters for Patients.*—Some sites are more suitable for shelters than others, but shelters should not as a rule exceed 10 per cent. of the total accommodation for patients. The shelters should be of wood.

(f) *General Observations.*—A 9 feet wide concrete plat may be provided in front and at ends of pavilions. In some cases this plat is without a roof, in others it is covered with a roof extending over one-half of the width. At the French windows to verandahs a 3-inch step should be allowed to prevent weather driving in. Recreation rooms are necessary for ambulant cases, and should be provided either in the administrative block or in conjunction with the dining-room where both are attached to the kitchen block. In pavilions for bed cases a small day-room should be provided. If a children's block forms part of the sanatorium, it will be necessary to have a separate observation pavilion for possible infections. To obtain the best possible results the pavilion should be planned on the cubicle system—each cubicle containing one or two beds. All buildings should be planned to permit of any future extension. The pavilions may be of one storey and of light construction. Workshop facilities should be provided with a view to affording interesting and useful occupational treatment and, in suitable cases, vocational training.

### (2) ADMINISTRATIVE SECTION.

(a) *Kitchen Block* (one-storey building).—Kitchen, scullery, vegetable scullery, larders, dry stores, bread stores, fish store, meat store, milk-room, office, coal store, bootroom and lavatory, patients' dining hall (with a floor area of 10 superficial feet per patient), men's cloakroom, women's cloakroom, servery and pantry with sinks for washing up, a nurses' dining-room, a maids' dining-room with a wash-up pantry adjoining in which the staff crockery is kept.

(b) *Staff Block* (two or three-storey building).

*Ground Floor.*—Entrance vestibule, with corridors 5 feet wide, office and visitors' room, consulting-room, X-ray room, dark-room off consulting-room, patients' dressing-room off consulting-room, patients' waiting-room, dispensary, laboratory and lavatory. Matron's sitting-room, bedroom and bathroom. Resident doctor's sitting-room, bedroom and bathroom. Small

servery for the preparation of doctor's and matron's meals. In the larger sanatoria a medical superintendent's house may be necessary. Nurses' sitting-room, maids' sitting-room, sewing-room, lavatories, boxroom, linen stores, etc.

*1st and 2nd Floors.*—Nurses' and maids' bedrooms Sick-rooms for nurses and maids. Where separate bedrooms are provided these should have a floor area of 100 superficial feet. Nurses' and maids' lavatories containing a minimum of one bath to ten, one w.c. to ten, and one basin to four persons. Housemaids' closet, boxroom, linen store.

(c) *General Observations.*—In place of having wash-hand basins in staff bedrooms, it has been found more convenient to provide suitable lavatories with basins. This arrangement has been found to work satisfactorily and obviates the labour of removing slops from each bedroom. A certain number of cubicle bedrooms may be provided for probationer nurses and maids. Each nurse or maid should have either a separate bedroom or cubicle, and double-bedded rooms should be avoided.

It is worth consideration whether it will not be more economical at the beginning to provide extra accommodation for nurses and maids to meet the needs of a future extension of bed accommodation for patients. In infectious diseases hospitals extra accommodation for nurses and maids is always required during an epidemic, when possibly double the sanctioned number of patients are placed in the wards.

(d) *Number of Nurses to be provided for.*—The following table gives the approximate number of nurses and maids necessary for various classes of institutions, though these notes apply more to No. 2 class of institution.

	Nurses.	Maids.
	Beds.	Beds.
1. Tuberculosis Hospitals	.. 1 to 6	1 to 8
2. Tuberculosis Hospital plus		
Sanatorium	.. .. 1 to 8	1 to 8
3. Sanatorium proper	.. .. 1 to 10	1 to 10
4. Sanatorium plus Work Colony	1 to 12	1 to 20
5. Work Colony	.. .. 1 to 20	1 to 20

### (3) POWER-HOUSE AND LAUNDRY BLOCK. (ONE-STOREY BUILDING.)

(a) *Power-house.*—Boiler-house, heating plant room, electric plant room, battery room, engineers' workshop, mortuary, garage, outside lavatory, destructor, coal store and petrol store (detached).

(b) *Laundry.*—Receiving-room, infected clothes apartment with disinfecter, wash-house, drying-room, laundry, dispatch-room, lavatory accommodation and small store. There is no necessity to have separate accommodation for staff linen, as this can be dealt with on a separate day if necessary. (Fig. 3.)

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### (4) OUTDOOR STAFF BUILDINGS.

Workmen's houses with three or four apartments and scullery, bathroom, larder, coal cellar. The construction to be of brick.

### (5) ACCOMMODATION FOR THE TREATMENT OF NON-PULMONARY CASES AMONG CHILDREN.

A separate pavilion on the lines of those for ambulant cases should be provided. It is possibly advisable not to plan the wards to accommodate more than 20 cots. In some cases 40 cots have been provided in one ward. This arrangement facilitates supervision and provides a suitable number of bed pupils for two teachers.

The depth of these wards should not be less than 11 feet, and the width of the verandah in front should be about 10 feet. The sun balcony or verandah should be partly roofed to the extent of about 5 feet. The front wall of the ward should be fitted with doors opening in two sections, solid wood in the lower and glazed in the upper section. In some sanatoria these pavilions are of two storeys—girls on one floor and boys on the other.

A small operating theatre block should be attached to this pavilion. It should contain an operating theatre about 15 feet by 15 feet, a sterilising room, an anaesthetising room or corridor outside the theatre, a preparation room for nurses, a plaster room, an X-ray and dark room, a small surgical dressing room, and the necessary lavatories. The operating room should be lighted from the north with the window extending to the ceiling. I would suggest that possibly the best floor for an operating theatre is smooth vitreous tile of a dark tone or terrazzo laid in small panels. The walls should be finished with hard-wall plaster treated with a flat enamel paint. Sometimes the walls for a height of 6 feet are tiled.

A dining-room and playroom may be provided for the children who can move about, but the majority will have meals in the wards.

The modern pavilions of the Maritime Hospital at Berck-Plage, France, are well planned, and the most recently erected hospital for surgical tuberculosis among children in England—the Liverpool Hospital for Children at Leasowe—is planned on somewhat similar lines. (Fig. 4.)

**SANATORIA IN THE UNITED STATES.**—Within the last few months the design of sanatoria in the United States has been receiving a good deal of consideration from the Public Health Services, and it is interesting to compare American planning with our own. In the United States, as the climate varies from sub-tropical to cold, a considerable diversity of plan is required. The plans issued recently for pavilions in a cold climate are very interesting. The pavilions for semi-ambulant and ambulant cases are built of two storeys, and each accom-

modates 48 beds. The semi-ambulant pavilions have the sitting or day room with the sanitary annexe in the centre, and the wards on either side are entered from an external corridor. The wards are formed into four-bed units, and between the centre pair of beds there is a stall partition 7 feet high, 9 feet from front to back, and 9 inches from the floor. The beds are arranged in pairs, with not less than 4 feet 6 inches between them, except as above described where a stall partition is formed.

A bedside locker is provided in the ward, but the wardrobe for dressing-gown, etc., is placed in the corridor. Heating is provided in the day-room and sanitary annexe, but none is allowed in the wards. The apartments provided in the sanitary annexe are as follows: a nurses' room, a utility or sink room, a wash-room with basins, slipper and spray baths, w.c.'s, linen-room, room for patients' boxes, occupational therapy store, diet kitchen and dining-room. As plugs are omitted from the basins and simple mixing taps installed so that ablutions are performed in running water, no dental basins are provided.

The ambulant pavilion is similar in general plan and arrangement to the semi-ambulant pavilion, but differs in the following respects: the diet kitchen, dining-room and sink-room are omitted. The usual nurses' room is not provided in every pavilion, as one nurse usually supervises several ambulant pavilions. The wards are for two beds, with one four-bed screened sleeping porch to serve two adjacent wards. Each ward has a window opening directly to the outside and not to the screened porch. This arrangement, known as the cottage type, has been adopted to meet the desire of ambulant patients for greater privacy than is obtained in open wards. (Figs. 5 and 6.)

### III. ISOLATION HOSPITALS FOR INFECTIOUS DISEASES.

**SITE.**—The size of the site varies considerably, according to the number of single or double-storey pavilions. The number of bed patients per acre runs from 15 to 20.

**HOSPITAL BUILDINGS.**—These consist of three classes:

- (1) Ward blocks for the reception of the sick.
- (2) Administrative block for staff and stores.
- (3) Offices—*i.e.*, laundry, wash-house, boiler-house, mortuary, etc.

It is desirable that the ward blocks should be placed 40 feet from each other or any other buildings, and at least the same distance from the boundaries of the site.

The best aspect for the ward blocks is usually with the windows facing a few points east of south and west of north.



FIG. 5.—PAVILION FOR SEMI-AMBULANT PATIENTS (U.S. PUBLIC HEALTH SERVICE)

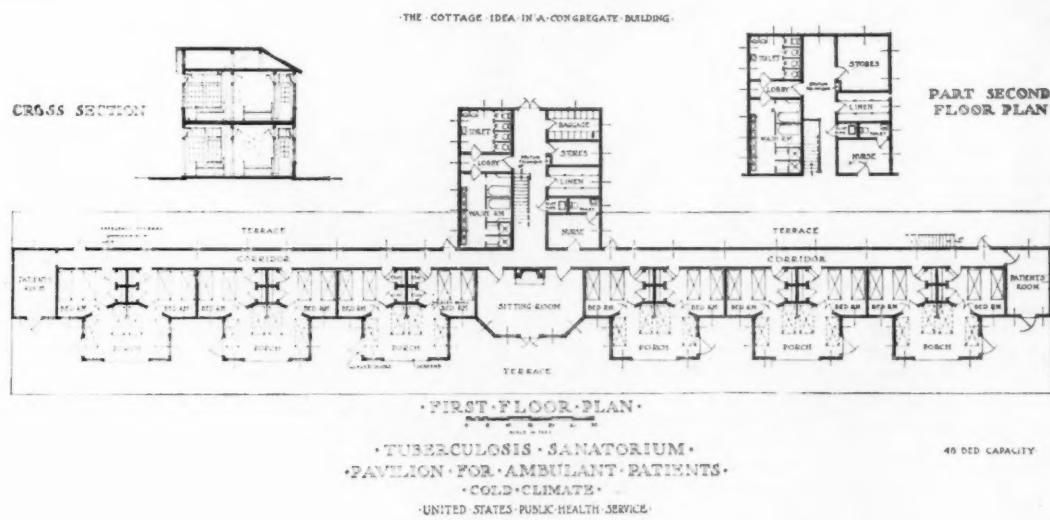
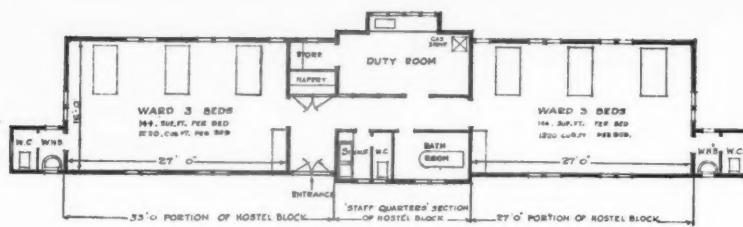
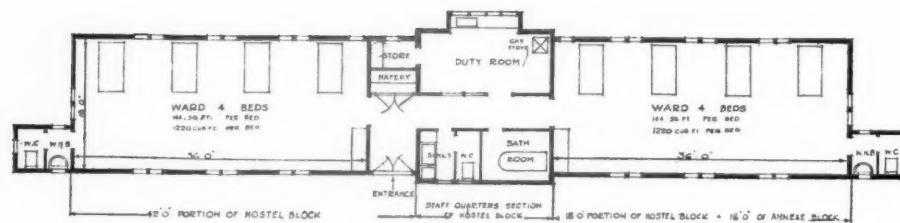


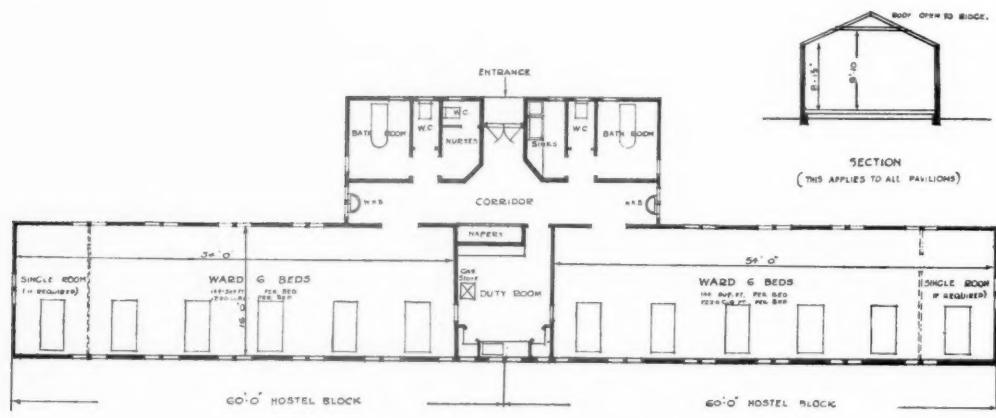
FIG. 6.—PAVILION FOR AMBULANT PATIENTS (U.S. PUBLIC HEALTH SERVICE)



OBSERVATION PAVILION (1 OFF).



ENTERIC OR DIPHTHERIA PAVILION (1 OFF).



SCARLET FEVER PAVILIONS (3 OFF).

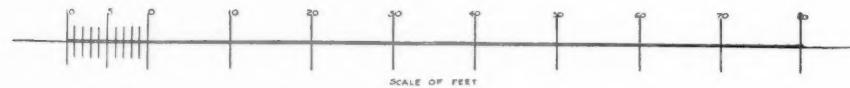


FIG. 7.—ISOLATION PAVILION, UDSTON HOSPITAL, HAMILTON

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### 1. WARD BLOCKS.

It is desirable that these should be of one storey. Blocks are usually provided for the three main infections—scarlet fever, diphtheria, and enteric—though measles, pneumonia and other infections are treated when accommodation is available.

Ward blocks should contain at least two wards—one for either sex, with the necessary sanitary annexe attached to each ward. A single ward should not have more than twenty beds.

In the central portion of the block should be placed the nurses' duty-room, milk larder, linen press, coal press, room for patients' clothes and boxes, also two wards for cases which for any reason it is desirable to isolate from others (one of these may be also fitted as a room for minor operations), with bath and w.c. in an annexe adjoining.

(a) *Wards.*—In the past the Local Government Board stipulated that each bed must have at least 12 lineal feet of wall space—144 square feet of floor space and 2,000 cubic feet of air space. (Fig. 7.) This regulation is not now strictly enforced, and if the superficial area is given, a reasonable height of ceiling is allowed, say 10 feet to 10 feet 6 inches. The width of wards will be according to the above size, 24 feet, with windows so arranged that the beds can be placed between them.

A wash-hand basin for the doctor and nurse should be provided in the wards. A medicine press may be placed in the ward.

Wards should be planned with a view to future extensions when found necessary.

Within recent years pavilions of single or two-bed wards have been constructed on the compartment or cubicle system for the separate isolation of mixed or doubtful cases of infectious disease. (Fig. 8.) These are very useful when only one or two cases of a single infection require isolation at a hospital.

The isolation wards should be the full width of the building, so that efficient cross ventilation can be obtained. The partition between the wards should be glazed above the dado level. It is not necessary to make the ceilings in these wards more than 10 feet.

The plans of the blocks at Walthamstow and the S.W. Hospital, London, are deficient in that these either have the wards placed back to back or have a central passage from which these are entered. The Pasteur Hospital in Paris has the same defect.

A day-room attached to each pavilion for convalescents should be provided.

(b) *Sanitary Annexes* should contain an apartment with bath and basin, a w.c. apartment and a sink-room with slop sink, steep sink for soiled or infected linen and a bedpan airing chamber. A bath and w.c. are sufficient for twelve to sixteen beds.

The position of the sanitary annexe in relation to the ward or wards has for a number of years been the subject of much discussion. Those which project from the side of a large ward are admittedly a nuisance, as they are obstructive of sunlight. The best position seems to be at the entrance to the large ward where the annexe is also convenient to the small wards. It may be entered both from the end of the large ward and the corridor through a small passage lighted from the outside. The small wards will be beyond, with the sanitary annexe between these and the large ward. The arrangement whereby the patient or nurse requires to leave the large ward and enter the main corridor in order to obtain access to the sanitary annexe is not a satisfactory one. With the improved fittings and plumbing of modern work the reason for the provision of the old ventilated "cut-off" passage has gone.

(c) *The Nurses' Duty-room or Kitchen* should be placed between the wards. In it should be placed a small range or gas cooker for warming milk, etc., a sink, a dresser and a milk press ventilated from the outside.

(d) *A Nurses' Lavatory and W.C.* should be provided in conjunction with the lavatory for female patients.

(e) A discharge bathroom with dressing-room adjoining have been provided in several hospitals, but they are seldom used.

Verandahs may be placed along the south wall of ward blocks, but if these are to be roofed in glass, care should be taken that proper ventilation is provided where the roof abuts on the ward wall. If this is not done, the wards tend to become stuffy. An apartment for storing patients' clothes and boxes should also be provided in the ward block.

### 2. ADMINISTRATIVE BLOCK.

This block should be placed in a central position to serve the various ward blocks.

It should contain a doctor's room with small laboratory adjoining, a matron's sitting-room, bedroom and bathroom, a nurses' dining-room and, where the hospital is a large one, a nurses' recreation room, bedrooms for nurses and servants, a kitchen with general scullery, vegetable scullery, stores, larders for meat, milk, vegetables and general provisions, servants' dining-room and, where the hospital is a large one, a maids' recreation room, nurses' and servants' lavatories, bathrooms and w.c.'s, large linen-room and stores for beds, bedding, etc., coal cellar, etc.

This block is usually built in two or three storeys.

The number of staff can be calculated on the basis of one nurse (day and night) for every four beds and one servant for every eight beds, though in very small hospitals the proportion of staff to beds is lower.

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### 3. OFFICES.

The offices consist of washing-house and laundry, disinfecting chamber, boiler-house and engine-room, coal-house and small workshop in one block.

The washing-house and laundry should have a receiving-room, a washing apartment, a drying-room, an ironing apartment, a dispatch-room, a small store and a lavatory.

The boiler-house, engine-room and coal-house are usually connected to this block, except in the larger hospitals.

A steam boiler is usually provided for (1) driving laundry and wash-house machinery, (2) general heating and domestic hot-water supply, and (3) cooking apparatus in kitchen. It is wise to provide an auxiliary boiler for emergencies.

The mortuary, with pathological laboratory and post-mortem room adjoining, small service room and viewing space, and motor ambulance shed are usually placed in a separate block, though these are sometimes attached to the laundry block.

The porter's lodge should have a room for visitors where they can interview nurses.

### IV. DETAILS OF CONSTRUCTION AND GENERAL FINISH.

In sanatoria and hospitals the pavilions or the ward blocks may be of one storey and of light construction, though in certain cases two-storey blocks have been erected of brick or concrete blocks. Of course, where the cost of one-storey buildings in brick or concrete blocks is not much dearer than that of buildings of light construction, the more permanent type of walling may be adopted. The administrative buildings, especially where of more than one storey, should be built of brick or concrete blocks.

**WALLS.**—The following methods of walling are suggested for light construction :—

1. Wood framing cased with breeze concrete slabs 2 inches thick and finished on the outside with rough-cast.

2. Wood framing covered with expanded metal lath and roughcast.

3. Wood framing covered with felt and weather boarding.

4. Wood framing covered with felt and galvanised corrugated iron sheeting.

The inside of the walls of these semi-permanent buildings should not be lined with match-boarding, but covered with plaster or some form of patent plaster board.

**ROOFS.**—The roof covering may be of slate, asbestos tiles or, in the case of iron buildings, of galvanised corrugated iron sheeting. Roofs should be ceiled at the wall-head level, and not more than a foot above the

lintel of the windows, in order that efficient ventilation of the wards may be obtained.

**FLOORS.**—The floors of a ward should be strong, durable and resilient.

A well-laid floor in pitch-pine or maple in 3-inch widths, treated with beeswax and turpentine or patent preparations of a similar nature, is durable and easily cleaned. Thick linoleum laid on ordinary flooring and treated in the same manner as the wood floor is quite serviceable, and is in use all over this and foreign countries. When linoleum is used there is always the difficulty of obtaining a satisfactory finish to the thick edge. Two thicknesses of flooring can be used, so that the linoleum will finish flush with a wood margin round the walls. A rounded fillet can be placed over the junction and form the line for the position of the bed legs. Floors treated with a preparation should never be washed, but only mopped over with a damp cloth. Rubber floor covering is equally satisfactory, but has in the past been prohibitive in price for hospitals. It is now being produced at a comparatively moderate cost, and its use is worth consideration. The floors of corridors and sanitary annexes should be of cement properly treated to prevent dusting. A linoleum runner can be used on corridors with advantage. Some of the magnesite floors give fairly good results, but these are not to be relied on absolutely ; they tend to retain grease and wear rough. Smooth vitreous tiles or terrazzo, laid in squares to avoid cracks showing, make an excellent floor for operating theatres.

**WINDOWS.**—The windows of a ward should have, as a rule, an area of 1 square foot for every 5 or 6 square feet of floor area. Various types of windows have been used—e.g., the double-hung sash window with hopper above the transom, the casement window with hopper over, and the centre-hung sash window with hopper in the lower part.

The double-hung sash window is suitable for the administrative buildings, and has also proved satisfactory for wards. A hinged draughtboard fixed to the sill should be provided. The austral window, an adaptation of the sash window, has been used in recent hospitals and found satisfactory. Wooden casement windows have often been used, but these are not satisfactory for exposed situations. Possibly the centre-hung sash window with hopper in the bottom part has proved as satisfactory as any type of window for efficient ventilation. The top of the window should be kept as near the ceiling as possible to give efficient ventilation. The ceilings may be coved towards the top of the windows. The sills should be kept about 2 feet 6 inches above the floor, to allow patients in bed a view of the surrounding country.

**DOORS.**—Ward doors should be 3 feet 6 inches wide, to allow the passage of a bed, and should be framed.

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without mouldings. To obviate the slamming of doors by excessive draughts, it may be well to provide swing doors for all wards and corridors. French doors 4 feet wide opening to the verandah from wards are often, especially in sanatoria, made of the stable type in two halves. These doors should have a plain segmental galvanised iron weather sill bar screwed to the floor. When the door shrinks the sill bar can be heightened by means of packing. Beds can be wheeled over the sill bar without damaging it. The doors of lavatories and w.c.'s should be kept 4 inches above the floor, to allow these apartments being swilled out. All door furnishings should be of lacquered metal, to avoid the labour of polishing. Door handles may be of cocus wood.

**VENTILATION.**—In the majority of hospitals natural ventilation is usually relied on and is found quite satisfactory. In addition to windows, inlets at window-breasts, with radiators placed immediately in front to heat the air as it passes over them, are usually provided. The fresh-air inlets should be accessible for cleaning purposes. All tobin tubes and extract shafts are unnecessary and bad; they cannot be entirely accessible, and they get filled with dust. In certain sanatoria uncloseable ventilation openings have been provided in the wards to obtain a continuous blow through. These as a rule have proved unsatisfactory, and the openings are eventually filled with hinged sashes. In recent years many old theories of ventilation have been exploded, and it is now generally accepted that natural ventilation is the best and can be most easily obtained by using Nature's own ventilation—the wind.

**HEATING.**—Wards, as well as other apartments, can be heated on a low-pressure hot-water system, by means of radiators. There are scientific objections to this system of heating, which is by means of convection, but in a well-ventilated ward these do not amount to much. A fireplace, however, should also be provided at the end of each large ward for the purpose of cheerfulness, ventilation and affording radiant heat. Central stoves are not very satisfactory, as the upright flue pipe is unsightly and the descending flues are objectionable, as these are difficult to keep clean and often cause shrinkage of the flooring. The low-pressure hot-water system of heating should be worked from an independent boiler, or in a large hospital from calorifiers placed either in the power-house or in the pavilions, and fed with steam from the central boiler. In small hospitals it is more economical to have a small independent boiler in each block for heating purposes. Corridors and sanitary annexes should always be heated. Where possible radiators should rest on wall brackets, so that the floor space is kept clear underneath for cleaning purposes. Heating by means of steam on the high-pressure system should be avoided for several reasons:—

1. The pipes and radiators require to be protected to prevent patients from coming in contact with them; a severe burning can be inflicted by contact with them.

2. Heating by means of steam tends to dry the air to an unpleasant degree.

3. The mechanical difficulties of keeping pipes steam-tight and free of condensed steam are considerable.

Gas-heated radiators should always be avoided. From the nature of their construction it is impossible to carry off the fumes of combustion, with the result that the atmosphere is vitiated by poisonous burnt products.

It is advisable in all kinds of hospitals to instal boilers with an excess of power considerably above their catalogue efficiency, so that when a cold "snap" comes the temperature in the wards can be raised easily. An auxiliary boiler should also be provided in case of a breakdown.

In sanatoria, except in sick wards, a minimum of heating should be provided. Sanitary annexes in all classes of public health institutions should always be heated. In recent years some physicians have treated various infectious diseases in wards of a fairly low temperature with marked success.

**DOMESTIC HOT-WATER SUPPLY.**—There should always be an ample supply of hot water for baths and sinks. In small hospitals the best plan is to have a small independent boiler in each block for the supply of hot water. In large hospitals where there is a supply of steam from a central boiler, calorifiers fed with steam can be used for the supply of hot water. Domestic hot water should never be drawn from the heating system.

**ARTIFICIAL LIGHTING.**—Electric light or gas should be provided where possible. Electric light is preferable for well-known reasons, but since the adoption of incandescent burners the disadvantages of gas are at present not so great as formerly. Gas can now be regulated by switch as in electric lighting. Where there is no public service of gas or electricity at hand, it may be well to consider the advisability of providing an installation for electric light. In a small hospital this may not be feasible, and the usual means of lighting by lamps burning mineral oil will require to be adopted. The risk from fire is, however, increased by the use of lamps. In recent years lamps using vaporised oil with incandescent mantles have been introduced. The best known of this type is the petrolite lamp, which, it is stated, can be used with safety. Acetylene gas has sometimes been used, but it is not always satisfactory. Petrol gas, which consists of a mixture of the vapour of petroleum and air, and which is claimed to be safer and cheaper than acetylene gas, has been found satisfactory.

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One advantage of petrol gas is that cooking stoves can be used in the service. Both these systems of lighting require, however, skilled attention, and in a remote district there may be some trouble in having repairs done expeditiously.

The general lighting in the wards should be by lights suspended from the ceiling with deep opaque shades, with the lamp entirely recessed, so that no direct light is thrown on the patient's face. To obtain diffused lighting a scheme of indirect lighting by means of lamps in inverted opaque shades illuminating the ceiling and the walls has been installed in various hospitals and found satisfactory. A plug placed at the head of each bed for a portable lamp should be provided.

**BATHROOMS.**—Except in very small ward blocks, it is advisable to have a bathroom for each ward.

Fixed iron porcelain-enamelled baths are to be preferred to movable metal baths, which always slop over when moved. For infectious diseases wards one bath will serve sixteen to twenty cases.

For tubercular wards, spray baths should be provided in addition to plunge baths for the ambulant cases. One bath will serve ten cases.

For departments where patients need assistance in taking their baths, these should be placed on a raised base to prevent the nurse stooping when bathing patients.

For children's wards where bathing is done by a nurse, smaller and shallower baths or slabs placed on high bases should be used.

For non-pulmonary bed cases among children, the ordinary bath is of little use when the children are in plaster frames. Some sort of washing slab, preferably of porcelain-enamelled iron instead of fireclay (as the latter is more difficult to heat), should be provided.

For admission bathrooms, a shallow bath or tub with spray should be used.

Supply pipes to basins and sinks should be kept clear of the walls.

**WATER CLOSETS.**—The water-carriage system of excretion disposal should always, if possible, be used.

In remote districts where a gravitation supply of water is not available for very small hospitals, earth closets must be used, but these are not satisfactory.

The position in the apartment of a w.c. should always allow of a straight flushing pipe from cistern being used if the combination type is not adopted. The seats of w.c.'s should be of the tip-up type.

**SINK-ROOM.**—This apartment contains:—

1. A slop sink suitable to receive slop water and the contents of bedpans.

2. A steeping tank or tub for the reception of soiled linen.

3. A press in outer wall for airing bedpans.

4. A press for keeping pails and brushes required in cleaning.

In regard to the slop sink, it should be placed sufficiently high to enable work to be done without stooping. The simpler the fitting the more effective it is. The use of fittings that are a complicated mass of valves, sprays, etc., should be avoided, as these require an expert to work and keep them clean. Sinks in duty-rooms where steam is available should have a steam pipe led to them for sterilising purposes.

**LOCKER-ROOM, BOOTROOM AND DRYING-ROOM.**—In sanatoria provision should be made for these rooms in ambulant pavilions.

The locker-room is often the lavatory or wash-up apartment. The lockers are placed round the walls and contain the toilet articles of the patients—*i.e.*, towels, mug, tooth brush, comb and hair brush. The door panels of the lockers are often formed of wire mesh.

In sick pavilions where it is usual to provide bedside lockers, these may be dispensed with in the case of children, and a wooden drawer fixed under the end of the bed frame.

The bootroom should be well ventilated, and have a wooden bench placed along one side on which boots can be brushed. The boots should be kept in this apartment.

The drying-room should be heated by means of a heater or rows of hot-water pipes. Wet clothes or bed wraps can be suspended from galvanised iron tubing fixed to the ceiling.

**LAUNDRIES.**—A hand-worked laundry will be found more economical than a laundry worked by machinery where the institution does not accommodate more than 25 beds. Once this number is increased, a steam laundry with machinery should be installed.

Except in very small institutions, the laundry block should consist of a receiving-room with bins, a wash-house and ironing-room in one apartment with drying-room placed in the centre, a small store for soap, soda, etc., a dispatch-room, and a lavatory for staff. The washing-house will have washing machines, hydro-extractors, soap boiler, a few wash-tubs and steep tank for infected linen.

The ironing-room will have a calender and ironing tables, with an ironing stove where gas or electric irons are not used.

Drying chambers with movable horses are not, as a rule, used nowadays, as the chambers are difficult to keep clean. A drying chamber with rails suspended from the ceiling should be heated by means of hot-water pipes to a moderate temperature, and the saturated air drawn off by means of a ventilating fan.

It was common practice in the past to have a separate wash-house for staff linen, but this is quite unnecessary,

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as separate days or a separate washer can be set aside for the staff linen.

In small institutions the mortuary, the ambulance shed, the coal store, etc., are usually attached to the laundry block.

For post-mortem purposes, a sink should be placed either in the mortuary or in a small apartment adjoining.

**DISINFECTOR.**—It is advisable even in a small institution to provide an apparatus for the disinfection of bedding, clothes, etc., that cannot be washed.

It is an economical arrangement to place the disinfecter in an apartment abutting on one of the walls of the wash-house, so that the disinfecter can discharge direct into the wash-house.

In large institutions where there is a steam boiler, a Washington Lyon, Manlove Alliott, or similar apparatus can be used.

Cheaper apparatus of the Velox or similar type of disinfecter is used sometimes in small institutions where no steam is available.

Sometimes a formalin spraying chamber is also provided.

**TELEPHONES.**—The ward blocks should be connected with the administrative blocks by telephone.

**COLOUR DECORATION.**—Too much care cannot be given to the general colour scheme for the walls and the finishings, not only of the wards, but all the apartments of an institution. Patients and staff, who possibly may be accustomed to taste in furniture and decoration in their own homes, should not be subjected to ugly and inartistic wards and rooms in hospitals.

The walls and woodwork can be treated in such a manner that a feeling of cheerfulness can be obtained without sacrificing restraint. As linoleum and cork carpet can now be obtained in so many different self tones, there is no necessity to abide by the original light-brown tone. Where cost will permit, tiling should be placed behind all plumbing fixtures and radiators to ensure cleanliness, and also to give a little colour. There is no detail too small to be given the fullest consideration by the architect if thereby the patients and the staff are made to feel comfortable and friction in administration is eliminated.

*(To be continued.)*

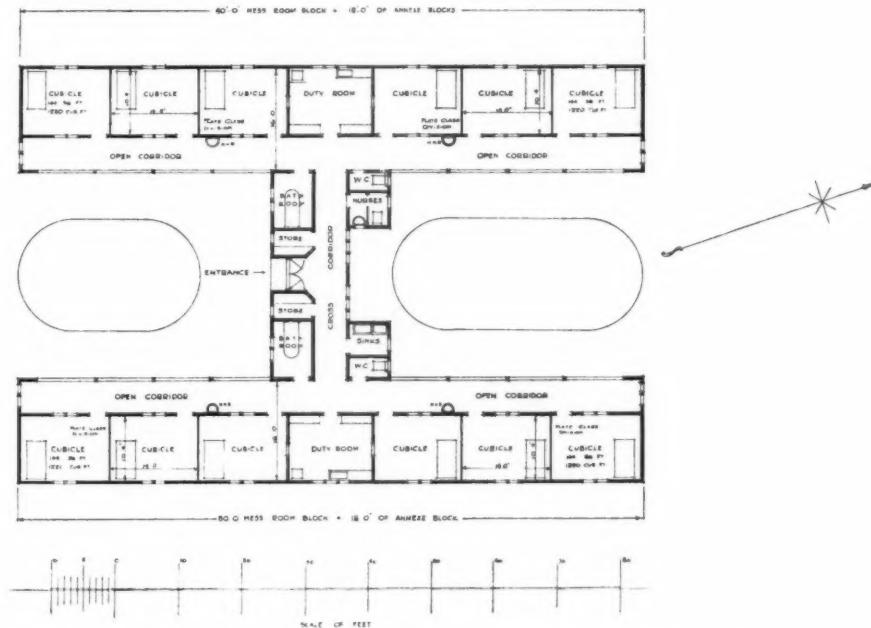


FIG. 8.—BURGH OF HAMILTON. UDSTON HOSPITAL, PROPOSED EXTENSION, ISOLATION BLOCK.  
ARCHITECTS: ALEX. CULLEN, LOCKHEAD AND BROWN

## English Church Monuments\*

A good book upon a most interesting and fascinating subject, and one, indeed, which will appeal to all students of mediæval architecture. The history of commemorative art is a reflection *in petto* of the decorative tendencies of contemporary building, and a vivid illustration of contemporary costume, armour, and heraldry.

Mr. Crossley has dealt with his charming subject not only in a charming manner, but with great industry and close observation, and, further, with obvious sympathy and enthusiasm.

In his modest Preface—not “Foreword,” thank goodness!—the author offers to his readers “a volume which can be used as a starting point for the study of Monuments of the Middle Ages.”

His book is a good deal more than that, and will give interest and pleasure by its erudition, its clear statement and chronological order, to folks of considerable initiation in that study; while its well-arranged series of illustrations, mostly photographic, admirably chosen and excellently reproduced, will be invaluable to students and delightful to mere amateurs, many of which latter class such a book is likely to convert into the former.

Mr. Crossley’s general introduction should be carefully read for its condensed historical approach to his subject.

We cannot fully accept one or two of his initial statements, such as that “the great periods of art in the world’s history are not more than three, the Greek, the Gothic, and the Italian Renaissance.” Can we ignore the Egyptian, and is there nothing to be said for Rome or Byzantium, for China or for Persia?

Again, our author declares that “Mediæval Art, unlike that of the Greek period, was built upon faith.”

Surely both, like all great art, were built on faith, that faith in their vital necessity without which no great work can be done; and, in the sense of religious faith, surely the Greek temples owed as much to zealously accepted creed, cult, and mystic ritual as the mediæval churches.

Mr. Crossley seems to us very sound in his view that up to the mid-fourteenth century, when the awful visitation of the Black Death shrivelled the arts and exterminated their adherents, the masons, at any rate in England, controlled them. And the earlier tombs and monuments of the period he selects show this very clearly. They are of stone and of thoroughly mason-like character.

In the earlier tombs bearing recumbent effigies there

is a closer assimilation to French fashions than in the later, yet almost always, even in the more elaborate examples, less grandiose in scale and detail, perhaps with more poetry, certainly with less “style.” And this is natural enough; that inestimable boon to British arts, the Norman Conquest, was not so very far behind, and a large proportion of our skilled craftsmen were themselves from overseas or the sons or grandsons of Frenchmen. The language current in the court, the monasteries, the army, and to a great extent in law and commerce, was French, and the point of view, the manners and customs were also largely French.

The mason guilds of England closely assimilated to the close corporations of masons in France, of whom the more skilled and intelligent members frequently developed into carvers or “Tailleurs d’Ymaiges,” and some of whom were employed in England, even far on in the fifteenth century.

There are in the church of Brede, in Sussex, a tomb with recumbent effigy, and a chapel door, as absolutely French as if they were in France, whose coast is, after all, almost within sight.

The author is right, I think, in attributing the separation of the craft of carving from that of masonry in England to the Black Death. That pestilence swept away an enormous number of the craftsmen. Villages were deserted, those great employers, the religious houses, depleted and weakened.

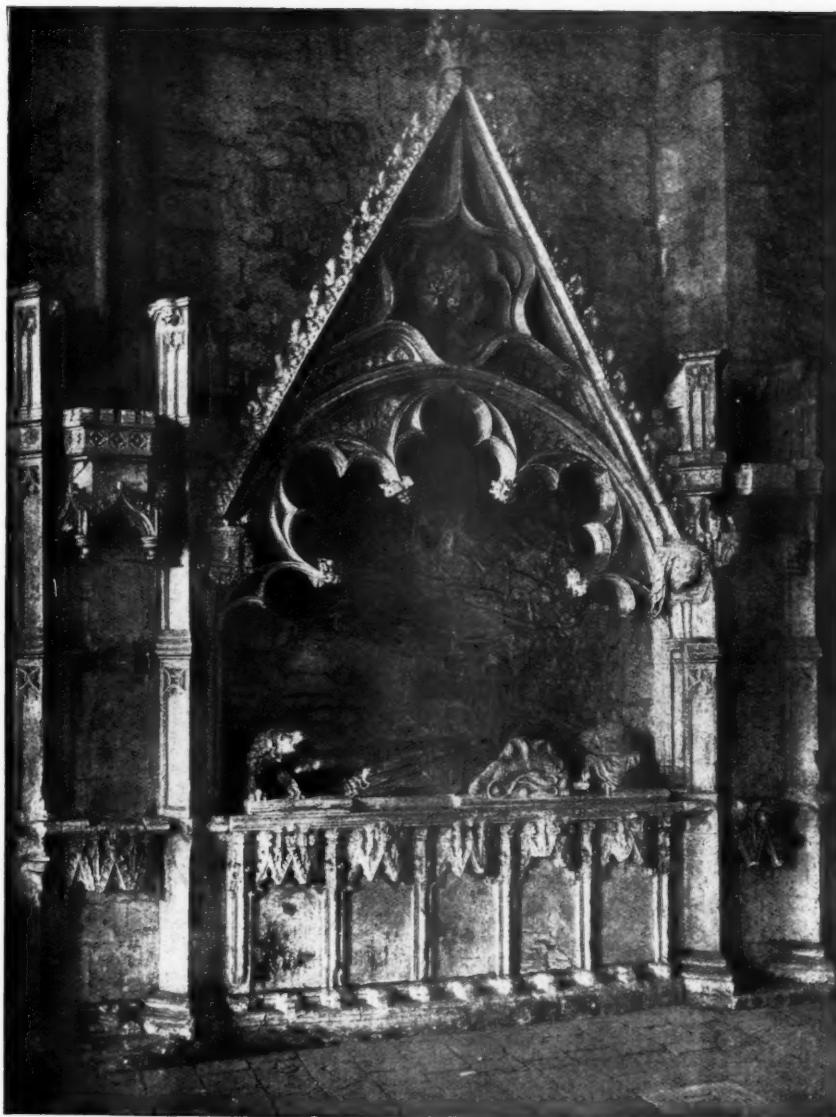
The towns offered shelter and well-paid employment for the skilled workmen who survived, and who naturally found opportunities of establishing their own workshops outside of confraternities.

Thus the image-makers’ shops grew up, and image-making and decorative carving became a distinct craft, losing greatly in freshness and vigour, if gaining for a time in technical skill.

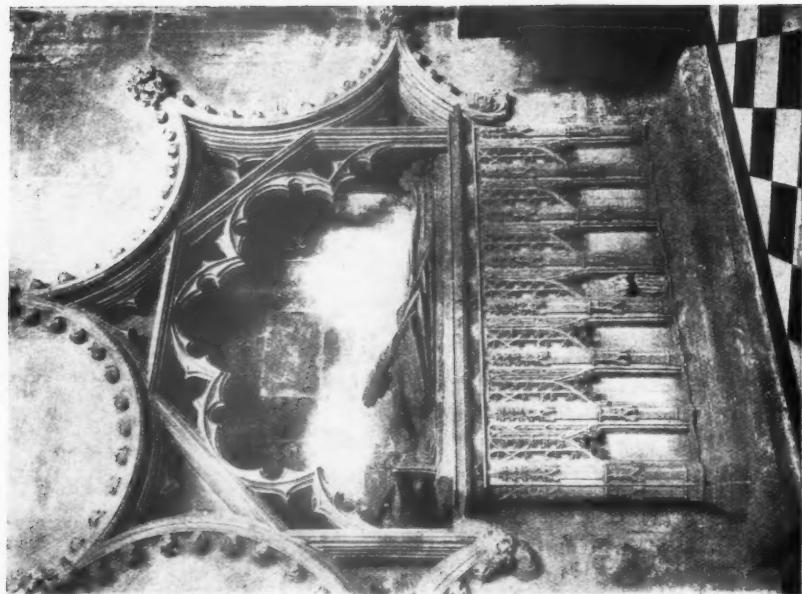
Mr. Crossley is nowhere more interesting than in dealing with the materials employed in English mediæval monumental work, and in their obvious effects upon treatment. The hard shelly limestone of Purbeck, capable of bearing polish and very generally called marble, the mountain limestones of the North, the oolites of the South-west, and the various sandstones of the southern Midlands, all influenced or produced types of design and workmanship; though for such relatively small objects as even the most elaborate of tombs the use of stone was by no means confined to the locality of its quarry.

Mediæval England being practically roadless, for heavy traffic, water transport had to be employed. This was easy enough for quarries on or near the coast, and of course helped greatly the use of Purbeck stone, while their positions upon tidal rivers near the sea and in stone-producing neighbourhoods easily account for the schools of masonry and the image-making workshops of such ports as Bristol and Gloucester.

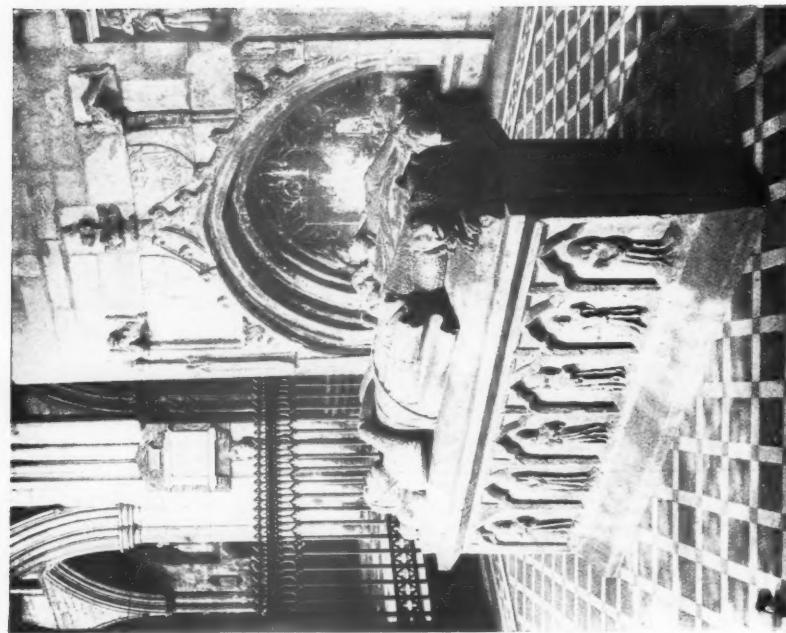
\* *English Church Monuments, A.D. 1150-1550.* By Fred. H. Crossley, F.S.A. 1921. [B. T. Batsford, Ltd.]



WINCHELSEA, SUSSEX  
TOMB OF STEPHEN ALARD, ADMIRAL OF THE CINQUE PORTE, 1324



ST. AUGUSTINE'S ABBEY, BRISTOL  
CANOPY, 1320. TOMB TO ABBOT WALTER NEWBURY, 1478



HOWDEN, E. R., YORKS  
TOMB DECORATED WITH FIGURES OF MINSTRELS

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Much stone came also overseas from Caen and other foreign ports, the little merchant ships delivering their cargoes of wool or other goods, and returning ballasted with building stone. Foreign stone may be found near the coast in the southern and eastern counties, and, on the banks of the Thames, competed with the Oxfordshire and Gloucestershire stones that came down stream.

England possessing fine alabaster in Staffordshire, Nottinghamshire, and Derbyshire, schools of carving and image-making shops naturally grew up near the quarries, and, as Mr. Crossley states, images, tombs, and reredos panels were distributed not only throughout England, but over the Continent, where they are still frequently to be seen.

The chapter upon colour decoration is of especial interest and of value to the student. That effigies, tombs and their canopies were entirely decorated with applied colour and gilding is, of course, very well known, but, as I think, very imperfectly realised.

The chapters upon costume and armour and that upon brasses are excellent and instructive. The index and glossary are exemplary in clearness and accuracy, and the whole compilation makes a very admirable book, upon which author and publisher are both to be congratulated. They will perhaps excuse the suggestion that a future and cheaper edition should be produced, especially directed at craftsmen, with fewer general illustrations, but containing, say, a dozen large-scale photographs of the finer carving and other details.

EDWARD WARREN, F.S.A. [F.]

### Review

**SPECIFICATION**, with which is incorporated the *Municipal Engineers' Specification for Architects, Surveyors, Engineers, etc.* Edited by Frederick Chatterton, F.R.I.B.A. [London Technical Journals, Ltd.]

The current annual issue of *Specification* (No. 24), under the able editorship of Mr. Frederick Chatterton, F.R.I.B.A., is a most interesting and valuable volume. As in previous editions, the trade sections have been revised and brought up to date by persons each with special knowledge of his particular branch of trade. The general principle of prefacing each section by copious data regarding materials, etc., amply illustrated and followed by typical specification clauses, has been adhered to, and, in many cases, considerably augmented.

One of the most useful portions of the book is the comprehensive index, divided into four sections—viz., "General," "Advertisers," "Analytical," and "Trade Names." The last is, perhaps, the most useful as, not infrequently, one remembers the trade name of a certain paint or chimney pot, but cannot, on the spur of the moment, recall the name of the firm supplying the article. The "Index to Trade Names," to a very

large extent, supplies this information. Doubtlessly, in future editions, this part of the index will be amplified and made more complete, independently of the fact that any particular firm does, or does not, advertise.

On looking through *Specification*, one is greatly impressed by the fact that, due to careful revision and additions, particulars of the latest methods of construction, materials, and proprietary articles are included. This is specially noticeable in the chapter—occupying about 15 pages—which deals with proprietary materials for rapid construction. Although the "Great War" is supposed to be over, the after-effects are still with us, and it is quite a question whether the innumerable "substitutes" for walls, roofs, floors, foundations, damp-proof courses, etc., will be employed to any great extent, except in the least costly (but by no means most economic) buildings.

The subjects dealt with in the special articles are all interesting and helpful. That by Mr. Sylvester Sullivan [A.], on "The Design and Construction of Shop Fronts," is illustrated by reproductions of photographs, both English and Continental. The various treatments shown for designing the windows in order to exhibit a large number of articles—or, perhaps, in the case where only one is to be displayed—are most useful.

The technical information is very concise in the article by Mr. J. P. Mendham on "The Construction of Farm Buildings," which is well illustrated by drawings, many of which have been lent for the purpose by the Board of Agriculture and Fisheries. In this subject the writer describes and illustrates a silo, which is used for the storage of fodder during the winter months.

Another article, by Mr. H. J. Birnstingl [A.], deals with "How to lay out a Housing Scheme," in which the author shows a hypothetical method of laying out an irregular area of about 73 acres, and gives very fully the various points which prompted him in making his design, such as the general principles, physical characteristics, roads, recreation spaces, etc. Plans, with short descriptions, are also shown of several examples of recent work by other architects.

Under the heading of "Roofer," by Mr. J. G. Cowell—who speaks with authority on the subject—a valuable addition has been made in regard to the matter of thatching. This delightful form of roofing for the country is being revived, and it may be interesting to know that, at the present time, in one of the English counties noted for its beautiful old thatching, many apprentices are being educated in the hitherto rather neglected craft.

The article by Mr. A. R. Powys [A.] on "The Repair of Ancient Buildings" is an excellent one, being very comprehensive, and including the R.I.B.A. "Hints to Workmen" and "Advice to Promoters of Restorations."

The short article by Mr. C. H. Dewey on "The In-

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surance of Buildings" deals with a matter on which an architect generally relies on the usual clauses in the contract to cover his client's liabilities. The writer, however, very clearly states the risks incurred by all persons concerned, and gives approximate figures for the rate per cent. of premium charges.

The main object of such a book as *Specification* is to condense in one volume a very large amount of information on the multitudinous subjects connected with building. This Mr. Chatterton has certainly achieved with great success.

R. STEPHEN AYLING [F.]

## Correspondence

### THE ROYAL INSTITUTE OF THE ARCHITECTS OF WESTERN AUSTRALIA INCORPORATED.

Perth, 12 February 1922.

To the Editor, JOURNAL R.I.B.A.,—

DEAR SIR,—The Hon. Secretary is sending you the formal notice about the change of the name of this Institute, and also an intimation that the Architects' Act was passed by the Parliament of this State on 12 January.

Our Governor, Sir Francis Newdegate, K.C.M.G., is very much interested in our profession and has much architectural knowledge. At our annual open social meeting last July we admitted him an Honorary Fellow of this Institute: at the same meeting he read the cablegram stating that His Majesty the King had conferred the prefix of "Royal."

This Institute, in common with others in Australia, has for years past been striving to obtain an Act to register architects. The Institute of New South Wales was the first to succeed, and got their Act last November.

Eight years ago a Bill was drafted by this Institute, but did not reach Parliament, and, the war intervening, no further action could be taken until after the armistice. In 1919 a new Bill was drafted and the Premier, the Hon. J. Mitchell, promised to bring it before Parliament as a Government measure, which he did in 1920, it being introduced into the Assembly by the Attorney-General. However, it met with so much opposition in the Press and in the House that it never passed the second reading, but was numbered with the "slaughtered innocents" at the end of the session.

The Institute was, however, determined to get an Act, and in order to ensure its passing the Bill was revised, and a few clauses which were known to be repugnant to Members of Parliament were omitted, the principal omission being the clause prohibiting any other than registered architects "practising architec-

ture for reward." The Institute did me the honour to suspend the rule which limited my term as president to two years, and extended it for a third year, as I had been so closely in touch with the Bill in drafting and in its course in Parliament. I therefore with renewed vigour attacked the matter. On 9 September 1921 the new Bill was printed by authority of the Premier, Sir James Mitchell, K.C.M.G., and the Minister for Works, the Hon. W. J. George, C.M.G., introduced it in the Legislative Assembly. Again it met with much opposition from both sides of the House; we were at a great disadvantage having only one member in the House who was earnestly favourably disposed to it, Mr. W. G. Pickering, M.L.A., an architect who had championed it so vigorously the previous year. I had numerous interviews with members to induce them to pass the Bill, but various amendments had to be agreed to. It, however, passed through the Assembly and reached the Legislative Council, where it was introduced by the Hon. H. P. Colebatch, Colonial Secretary. Here opposition was met with from quite unexpected quarters, but it did not sustain any serious injury until every clause had been passed. Then a member threw a bomb into the arena by proposing an additional clause limiting the operation of the Act to the metropolitan area, and the House passed it. Fancy a man being an architect in London and not in Windsor! The absurdity of this amendment so violently perturbed some of our members that they wished to withdraw the Bill, but after consultation with Mr. Colebatch I determined to go on, and the Bill was sent back to the Assembly to approve the amendment, and just what I hoped for took place: the Assembly disagreed with the Council's preposterous amendment. By this time I was watching the clock, having been informed that Parliament would be prorogued in two days. I waited for seven hours in the gallery of the Council expecting the Bill to come up from the Assembly. At 1.15 a.m. I left the House to their all-night sitting. On 12 January I again went to the Council prepared for the worst, but to my great relief the members went back on their own amendment and threw out the limiting clause, and the Bill was passed just one hour before prorogation.

Nevertheless, judging from the hostility displayed by the Press and by many Members of Parliament, I feel assured that had the Bill not passed this session it would certainly never pass. The great cry was that such Bills are only in the interest of a favoured small section of the community who place themselves on a pedestal. The "practical" man was being displaced.

As you will see, the Bill very clearly gives builders and others besides architects the right to usurp architect's functions, but not his title; to restrict their professions is against public opinion. The professional man is not a *persona grata* in these days—certainly not in Australia.

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I consider that by getting statutory recognition of the profession we have gained all we can reasonably expect. It is for architects to prove they are entitled to more. At any rate, I shall end my three years' tenure of office with great satisfaction, and no man could occupy such an office under more happy circumstances and with so much cordial assistance and continued appreciation as the members of this Institute have evinced throughout my occupancy of the chair.—Yours very faithfully,

A. R. L. WRIGHT,  
*Licentiate R.I.B.A., President R.I.A.W.A.*

### ARCHITECTURAL EDUCATION AND OVER-CROWDING.

*To the Editor, JOURNAL R.I.B.A.,—*

SIR,—It was with pleasure that I read the letter by the President of the Architectural Association, with regard to the Entrance Examination held at their schools, published in your issue of 25th ult.

I think it will be found customary in most of the "Recognised Schools" to hold entrance examinations for students who cannot produce evidence of a sufficiently high general education. Provincial schools are at a disadvantage, in that they receive students for part-time or evening courses, who have been in architects' offices for several years, although quite unfitted for the profession as regards general education.

The tendency amongst practising architects, who are not members of the Institute, and not fully aware of the Institute's Examinations, is to engage lads between the ages of 14 and 16 years, who have not had the opportunity of a secondary education. After several years of office work these lads begin to attend the architectural schools and to consider the expediency of entering the examinations.

The question then arises as to whether the school authorities should close their doors to these students although they may show considerable promise in their profession.

Obviously had the architects, in the first place, refused to engage pupils until they had completed a course at a secondary school, the situation would never have arisen.

I think the matter is one which ought to be taken up by the Board of Architectural Education, and employers notified of their views.—I am, yours faithfully,

JOSEPH ADDISON [A.J.].  
*Head, Department of Architecture,  
Leeds School of Art.*

### CONDITIONS OF CONTRACT.

*To the Editor, JOURNAL R.I.B.A.,—*

DEAR SIR,—The Councils of the Royal Institute of British Architects, the Institute of Builders and the National Federation of Building Trades' Employers of

Great Britain and Ireland inform their members that until the National Standard Form of Conditions of Contract is agreed, the Conditions of Contract, dated October 1909, issued under the sanction of the Royal Institute of British Architects, in agreement with the Institute of Builders and the National Federation of Building Trades' Employers of Great Britain and Ireland, is temporarily the Form approved by these bodies, and that a joint letter be inserted in the respective journals of these bodies to that effect.—Yours faithfully,

IAN MACALISTER,  
*Secretary, Royal Institute of British Architects.*

A. HUTCHINSON,  
*Secretary, Institute of Builders.*

A. G. WHITE,  
*Secretary, National Federation of Building Trades' Employers.*

## South Wales Institute of Architects

R.I.B.A. CONFERENCE IN CARDIFF, 8, 9 and  
10 JUNE 1922.

### PROGRAMME.

*Thursday Evening, 8 June.*

8.30 p.m.—Reception by the Lord Mayor of Cardiff (Councillor F. H. Turnbull) at the City Hall. An exhibition of prints and photographs of Cardiff, old and new, will be on view.

*Friday Morning, 9 June.*

10.30 a.m. to 11.30 a.m.—Paper by Major Harry P. Barnes, M.P., F.R.I.B.A., on "Unification and Registration."

11.45 a.m. to 1.0 p.m.—Visit to City Hall and Law Courts, Cathays Park.

### Friday Afternoon.

2.30 p.m. to 5.0 p.m.—Visits to Welsh National Museum and Glamorgan County Hall.

*Friday Evening.*

7.0 p.m. for 7.30 p.m.—R.I.B.A. Banquet.

*Saturday Morning, 10 June.*

10.0 a.m. to 11.15 a.m.—Paper by H. T. Buckland, Esq., F.R.I.B.A., President of the Birmingham Architectural Association, on "Civic Architecture and Advisory Art Committees."

11.15 a.m. to 12.30 p.m.—Paper by Percy Thomas, Esq., O.B.E., F.R.I.B.A., President of the South Wales Institute of Architects, on "Problems of Practice."

*Saturday Afternoon.*

2.0 p.m. to 6.0 p.m.—Visit to Cardiff Castle and Grounds.

4.0 p.m.—Tea in the Castle Grounds, by kind invitation of the Marquis of Bute.

*Saturday Night.*

8.0 p.m.—Smoking Concert.

*Sunday, 11 June.*

Arrangements are in hand for a char-à-banc tour to Tintern Abbey and the Wye Valley for those members who stay in Cardiff over the week-end.

## Unification and Registration

The Council have been informed that a good deal of misunderstanding exists, particularly among members in the provinces, as to the steps that have been taken in furtherance of the policy of Unification and Registration and as to the present situation. They have therefore directed that a short statement should be issued for the information of members.

It will be recalled that ever since the year 1905 the R.I.B.A. has been pledged to a policy of Statutory Registration, and various schemes have been prepared in order to enable a Registration Bill to be presented to Parliament with reasonable prospects of success. During this period the provincial societies generally have lost no opportunity of repeating their conviction of the urgent necessity for Statutory Registration, and their anxiety to assist in furthering the Registration policy.

At the end of the war the R.I.B.A. Council were again assured, through the resolutions of the provincial bodies and through the medium of the professional press, that the members of the R.I.B.A. and of the Allied Societies were as firmly convinced as ever of the necessity for Registration. At the same time the opinion was generally expressed that the unification of the profession was an urgent necessity in the interests of architects generally, and also as a means towards the attainment of Statutory Registration.

It is clear that by linking up all sections of the profession, and giving a central Council power to act on behalf of all, the action of the profession in public matters must be enormously strengthened. Not only is the question of Registration affected, but also all matters of architects' charges, conditions of competition, the relations between the profession and public bodies, action in legal cases, the regulation of professional practice, and the important matter of education. It is obvious that when legislation affecting the profession is dealt with in Parliament or when Government Departments seek the services of architects a united profession can exercise influence and pressure that would be impossible in the absence of unity of action. All the competent advice that has been given on the question of registration by Act of Parliament goes to show that united action is essential to success, and therefore the Council are convinced that Unification must be the first step.

The Council accordingly invited the whole profession to form a completely representative body for the purpose of drafting a scheme for the unification and registration of the profession. This step was hailed with unanimous approval, and the committee was formed. It contained representatives of all classes of the Royal Institute and delegates appointed by the council of every architectural organisation of any importance in

the Empire. The Society of Architects, the Architectural Association, the Official Architects' Association, the twenty Allied Societies in the United Kingdom, the ten Allied Societies in the Dominions, the Assistants' Union, and the Ulster Society of Architects all took part in the formation of the committee, and a general meeting of unattached architects also elected representatives. The resulting body of 66 members was the most completely representative body of architects of the Empire that had ever come together.

The committee began its work in July 1920, and after considerable discussion it issued an interim report on 12 May 1921 for the consideration of the Councils of the R.I.B.A. and of the Society of Architects. This report, which had the almost unanimous support of the whole committee, was, in effect, a recommendation that unification of the profession should be effected by the inclusion of qualified architects in the R.I.B.A. rather than by the formation of a new and independent outside body to govern the profession.

The committee requested the Council of the R.I.B.A. and of the Society of Architects to enter into negotiations and to find out whether, as a first step, a basis could be found for the absorption of the Society into the membership of the R.I.B.A. *This is the stage which has now been reached.* Committees representing the R.I.B.A. and the Society have discussed a provisional scheme; a committee representing the Associates is now discussing this scheme in detail with a view to its approval or amendment by the Associates. The Licentiates' Association has been considering how the interests of the Licentiate class would be affected.

*No binding decisions of any kind have yet been made.* Alternative suggestions are being carefully weighed by the various committees, and exhaustive discussion and the consultation of many interests will be necessary before any definite conclusion can be arrived at. It will only be at the termination of these discussions that the general body of the R.I.B.A. will be asked to consider the Council's ultimate conclusions and to give a definite verdict upon them. Before they are asked for that verdict the fullest and most detailed information will be supplied to them, and ample notice will be given of the meeting or meetings at which the subject will be discussed. As the matter is one deeply affecting the interests of members, it would not be fair that the decision upon it should be made at a meeting in London which could only be attended by a very small proportion of the provincial members who form the great majority of the R.I.B.A., and it is the Council's intention to take a postal vote on the subject, so that every member of the Institute will have an opportunity of expressing his opinion.

In the meantime the Council desire to make a special appeal to members to suspend judgment until a scheme has been prepared for their consideration by their own

## JOURNAL OF THE ROYAL INSTITUTE OF BRITISH ARCHITECTS

representative committee, and to ignore the premature agitation which has been set on foot by a certain number of members who are attacking proposals that have not yet been worked out by the responsible committees or placed before the members.

It is not by the vote of some 6 per cent. of the corporate members at a specially requisitioned meeting in London that this great and complex question can be settled, but by the considered opinion and the deliberate vote of the whole body of members when a scheme is finally placed before them.

It appears to have been rather generally but groundlessly assumed by the opponents of Unification that it implies :—

(a) The advancement to the full privileges of the R.I.B.A. of all the outside architects of whatever qualifications, and

(b) The loss by the Associates of all the prestige attaching to them as possessors of the hall-mark of examination.

The scheme of Unification, when issued, will show how these two points, which are of the greatest importance, are intended to be dealt with.

IAN MACALISTER,  
*Secretary, The Royal Institute of  
British Architects.*

18 March 1922.

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### NATIONAL HOUSING AND SIR CHARLES T. RUTHEN.

The following letters have been exchanged between Sir Charles T. Ruthen and the Institute :—

*Ministry of Health, Whitehall.*  
16 March 1922.

DEAR MR. PRESIDENT,—Referring to the resolutions passed by the Council of the Royal Institute of British Architects dealing with my address to the Society of Architects, you may have seen in the Press my reply to a letter from the Secretary of the National Housing and Town Planning Council, in which I pointed out that some parts of my address had been entirely misunderstood, and explained the extent to which I intended my criticism of the part taken by architects in the Government Housing Scheme to apply. You will believe that it was with great regret that I found my words interpreted as throwing upon the architectural profession a general degree of responsibility, and subjecting them to an extent of criticism never intended by me.

The criticism which I had intended to make was naturally not made without cause; there are unfortunately clear evidences that the Government did not receive in certain cases the help which they were entitled to expect from some of the architects engaged on housing schemes, and much time was occupied by the official staffs in eliminating needless and extravagant provisions.

I am very willing to meet the Council of the Royal Institute of British Architects if that is their wish. I could do

so if invited on 20 March or at the following meeting; but in view of the explanation which has already been published, and my reiterated desire that architects may continue to be associated with Housing work, perhaps you may feel, as I do, that no good purpose will be served by embarking on a discussion of the extent to which certain architects proved to be inexperienced in a special class of work, and thus added a quota to the already inflated cost which had to be contended with. In any case I need scarcely assure you, as Director General of Housing, of my recognition that in many cases architects loyally assisted the Government in their struggle for economy, and of my entire goodwill towards the members of the Institute and the architectural profession generally.—Yours faithfully,

CHARLES T. RUTHEN.

Paul Waterhouse, Esq.,  
P.R.I.B.A.

22 March 1922.

DEAR SIR,—The letter which you addressed to the President R.I.B.A., under date 16 March 1922, was laid before the Council on the 20th instant, and by resolution then passed I was directed to say in reply :—

1. That in thanking you for your assurance that parts of your address had been misunderstood, the Council specially welcomes your explanation that you had no intention of "throwing upon the architectural profession a general degree of responsibility."

2. That they receive with satisfaction your recognition of loyal assistance rendered by many members of the profession in the national struggle for economy.

3. That while naturally pledged to continue to deal, as in the past, with all questions requiring disciplinary action within the ranks of their own members, they concur in considering that a further discussion on the lines to which you refer is unnecessary.—Faithfully yours,

IAN MACALISTER,  
*Secretary.*

Sir Charles Ruthen, O.B.E.

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### THE ROYAL GOLD MEDAL FOR ARCHITECTURE.

At a General Meeting of the Royal Institute of British Architects, on 6 March, Mr. Thomas Hastings, of New York, was elected by the members, and his name will be submitted to His Majesty the King as a fit recipient of the Royal Gold Medal for Architecture for the year 1922.

In the event of His Majesty graciously signifying his approval of the award, the Medal will be presented to Mr. Hastings at a formal meeting on 26 June.

Since the institution of this medal by Queen Victoria in 1848, it has only been conferred on American Architects on two previous occasions. In 1893 it was awarded to Richard Morris Hunt, and in 1903 to Charles Follen McKim.

## Higher Buildings for London

At a General Business Meeting which was held on 20 February the President (Mr. Paul Waterhouse) in the chair, the question of Higher Buildings for London was discussed on motions submitted by Mr. Maurice E. Webb and Mr. Delissa Joseph.

The PRESIDENT : I will call upon the Secretary to read the notices of motion which have been received under the provisions of Bye-law 61.

The SECRETARY : The following motion has been received : "That this General Meeting of the Royal Institute of British Architects approves the action taken by the Council in connection with the Report of the London Building Act Committee." To be moved by Mr. Maurice Webb, and seconded by Mr. Raymond Unwin.

The following further motion has also been received : "That this meeting approves the general principle of allowing buildings to be erected in certain positions of a greater height than is the present practice, subject to proper safeguards as to construction, fire escape, and fire attack." To be moved by Mr. Delissa Joseph, and seconded by Mr. Austen Hall.

Mr. DELISSA JOSEPH [F.] : May I rise to a point of order ? This meeting was announced to be held for the purpose of a discussion on higher buildings for London, the idea being, as I gather, that the general body of members should have an opportunity of a free discussion upon this topic. If you accept the resolution which stands in my name, that will be so. But by accepting the other resolution you will be limiting the discussion to the question of the conduct of the Council in the matter, and a vote upon that resolution will be in the nature of either a vote of confidence in the Council or a vote of censure on the Council ; and that will, necessarily, restrict the area and scope of the discussion. I submit it is not in order in relation to the terms under which the meeting has been called.

The PRESIDENT : I understand you to ask for my ruling as to whether the notice which appears under the names of Mr. Webb and Mr. Unwin is in order or is not ?

Mr. JOSEPH : That is the point I presented to you, sir.

The PRESIDENT : It occurs to me, in view of the relationship which one of the motions bears to the other, that the best way of dealing with the second resolution would be to treat it as an amendment, if the mover so think.

After further discussion on the point the PRESIDENT said : I have two motions before me, and unless I receive a suggestion from the mover that he wishes to withdraw it, I can see no reason why they should not both be taken one after the other.

Mr. MAURICE WEBB [F.] : in moving the resolution, said : I am rather sorry that time has been wasted on this interesting discussion as to procedure on the resolution and the amendment. As far as I am concerned as the mover of this resolution, I do not mind what form is chosen. I am speaking principally as a dweller in the City of London, but also as a member of the Art Committee of the Council who have given many hours of serious consideration to this Report of Mr. Joseph's Committee, and I must trouble you with a short history of what has happened, for the benefit of those who may not have read the whole of the particulars in the JOURNAL.

As everyone knows, architects have been a little dissatisfied with the London Building Act ; they feel that there are many points in it which require alteration ; and after the Papers read by Mr. Austen Hall and by Mr. Joseph about two years ago at this Institute, a committee was formed by the Council with the express object of going into the whole question of the London Building Act, and advising the Council if any alterations were required. In November 1921, eighteen months afterwards, this

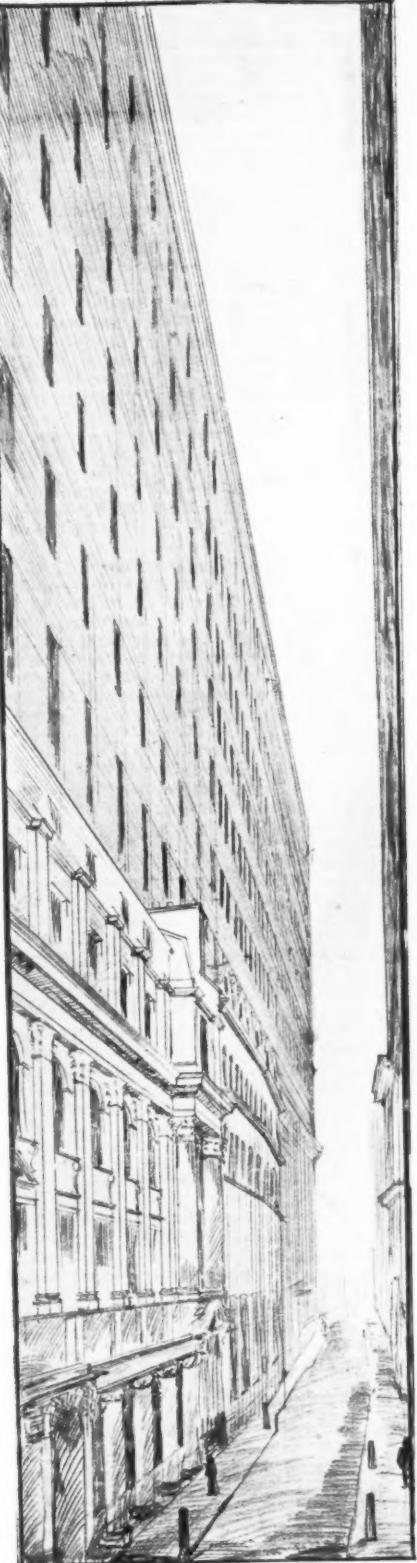
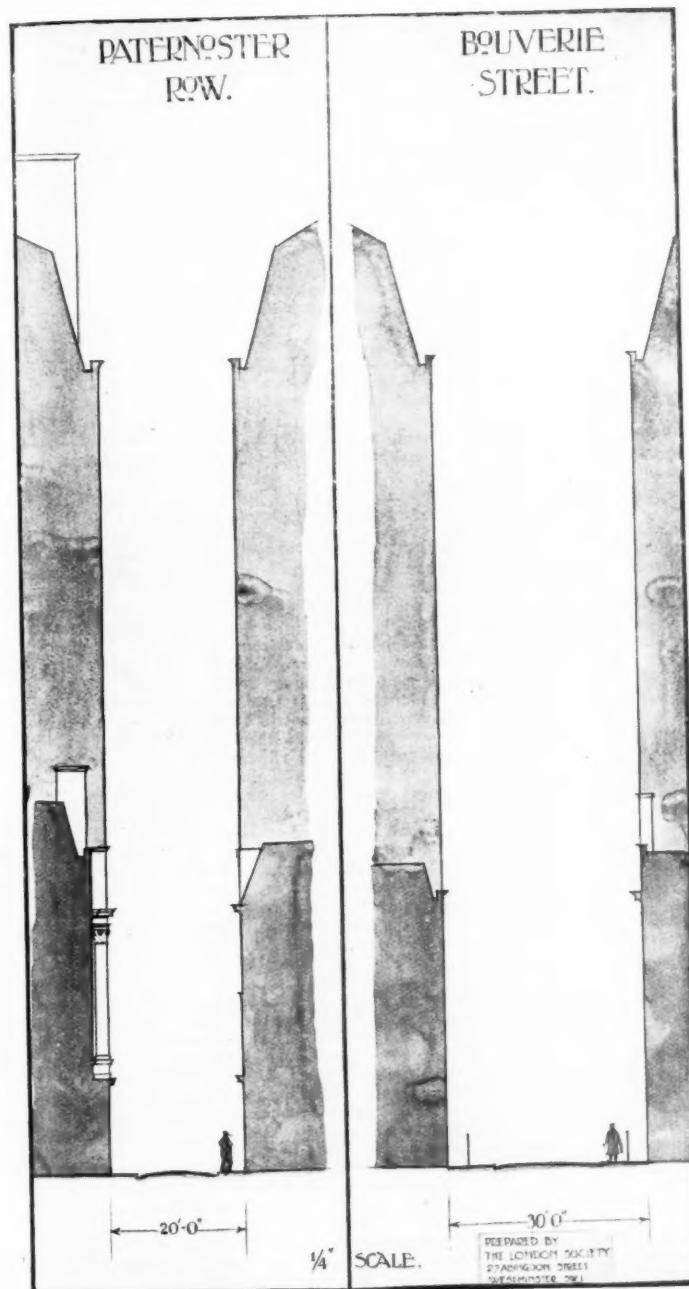
Committee submitted an interim report to the Council dealing with two subjects in the Building Act only, and—I think very properly—they picked out the two most important ones. It is a pity the Committee took so long to report. They picked out the question of a general increase in the height of buildings for London, and the question of cubical contents for large buildings. They submitted, with the Majority Report, a Minority Report, the Minority Report signed by Mr. Keen. I am not quite clear as to who supported the Majority Report, or who would have supported the Minority Report if there had been time to get other signatures to it ; but as the Council got it Mr. Keen was the only person who signed the Minority Report.

This Minority Report traversed nearly all the points in the Majority Report. The Council, having received that Report, did the only thing they could possibly do : they referred it to the Committees of the Institute which are set up for the purpose of advising them on such matters—the Town Planning Committee, the Art Committee, the Practice Committee, and the Science Committee. Three of these four committees reported in favour of Mr. Keen's Minority Report, and the Council, again after considerable discussion, adopted the report of the Art Committee, which went into the subject in some detail. But at the same time the Council thought it was a subject of such importance that the general body of members should have an opportunity of discussing it, and that is why we are here to-night, and that is why I put forward this motion—that is why we are here to discuss, at Mr. Joseph's request, the conclusions come to in the Report of the Committee of which he was the honorary secretary. The effect of adopting the Art Committee's Report, broadly, was first of all to agree with Mr. Joseph's Committee on the question of buildings of large cubical contents ; and I think it is gratifying to see that since the Council has adopted their proposals the London County Council have also adopted them and have made very considerable modifications in their requirements for buildings of large cubical contents. But on the other two main points raised by Mr. Joseph's Committee the effect of adopting the Art Committee's Report is to oppose their conclusions. First of all as to the City of London, this is what the Committee advised (I read from their Report) : "That in the case of the City of London, buildings 120 feet high, exclusive of two storeys in the roof, should be permitted in any street, irrespective of its width, or of its date." That proposal was turned down by the Council, and by three of their four Committees. The other proposal, asking the County Council to grant their powers more freely for buildings up to 150 feet in height in the rest of London, was dealt with in the Art Committee's report : "That an occasional building higher than the rest of the street may be an advantage in breaking the sky-line and so relieving the monotony of a long stretch of buildings of equal height. As Mr. Keen points out in the Minority Report, the L.C.C. have power to allow this—a power which the Committee feels should be exercised very carefully, and only in the case of buildings which, from their nature or site, should be of a dominating character. Whether the L.C.C. acting alone is the proper authority to exercise this power is another matter which may be worth the attention of the R.I.B.A. The Committee consider that some system of zoning or marking of such special sites on a carefully thought out plan, having due regard to the neighbourhood, surrounding buildings, width of street, and other public amenities, is essential before any fuller use is made of the L.C.C.'s powers, if the scale and character of London architecture is not to be destroyed." I am prepared to stand by that sentence.

That, I think, is a fair history of what happened within this Institute. I do not propose to touch on the newspaper controversy which has been carried on outside.

In considering the Council's attitude in this matter I think we must remember that we exist to further the cause of architecture, and incidentally the public amenities of the cities in which we live, in this particular case London. In matters affecting London we must hold the judge's scales

# PATERNOSTER ROW.



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between the various sections of the community, and I submit that in this instance the Council of the Institute has done so. Three out of their four Committees have voted against these proposals for higher buildings irrespective of the size and width of the street. The London Society reported against them, also the London County Council after consultation with their Fire Brigade Committee ; the Metropolitan Branch of the Medical Officers' Association reported in favour, subject to many questions of health and sanitation, and only on the assumption that underground rooms would not be used for working in future, an assumption which has no foundation in fact. I have not visited America, but I understand that there in their high buildings they have enormous basements going down in some instances 50 or 60 feet, in which people work and more or less live the greater part of the day. Only to-day I have received a report of the Town-Planning Institute. They have gone into the whole subject—and they are a very responsible body—and they have voted against the general idea of allowing an increase in the height of buildings. The only people whom the Building Acts Committee received unqualified encouragement from were the Association of Retail Distributors, who supported the scheme. In all London, after eighteen months' deliberation, they could only find one organised body of men to support their proposals, and that is a body of business men who are, naturally and very properly, looking after their own interests. The Committee's Report, which the Council rejected, contained in it from beginning to end as far as I could see, no thought of any interest but that of commerce, and the immediate needs of the great stores and other public buildings ; there is no suggestion that anybody or anything else is worth considering, except with regard to precautions against fire and the elementary needs of sanitation. The word "Architecture" is not mentioned in that report from the first word to the last. Our Council does not exist to support one particular branch of the community : we are bound to consider the good of the whole. If we did not, our work would not carry any weight with the public. If the capacity of the City is increased by 50 per cent. the whole of the supply services will be hopelessly overloaded ; they are bound to be. There will be a 50 per cent. increase in the work which will have to be done by the drains, by the mains, the tubes, the buses, the trams, and all for the benefit of a few people who own or wish to erect large buildings. That is one of the great troubles they have in America, and that is why they are now adopting very drastic laws limiting the height of buildings for the future. None of those points was brought out in the Report. It has been said by the supporters of these proposals for high buildings that those who oppose them have used unfairly the argument of the American "sky-scraper." Sir Henry Tanner and Mr. Joseph have both published diagrams in the last few weeks showing sky-scrapers in comparison with their proposals, and I suppose they have done so to try to persuade us and the British public how innocuous their proposals are, because the proposed buildings look small and low beside the American sky-scraper. So to-night, as we have been accused of unfairness in this respect, I am showing two or three diagrams, which are on the wall, and which omit any reference to sky-scrapers. [See p. 311.] Those are two ordinary London streets in the City—Paternoster Row, which is 20 feet wide, and Bouverie Street, 30 feet wide. If 120-feet buildings are to be put there, that is what you will get. The diagram speaks for itself. It is a sketch made from a photograph. The lower half is the height of the buildings to-day ; the upper portion shows the height if they are built as proposed. I have taken two average streets ; they are not the largest nor the narrowest. I cannot help feeling that anyone who thinks at all is bound to support the Council in their action in throwing out this report as an insufficiently considered one. In it nothing has been taken note of except business interests ; and if you throw out this resolution, you will be doing a great disservice to the Institute. The public at present regard the Institute as their

adviser on these matters, and anyone can see that to live in streets like that cannot be good for health or for business or for the community in any way. Therefore I ask you to support this resolution : "That this general meeting of the Royal Institute of British Architects approves the action taken by the Council in connection with the report of the London Building Acts Committee."

Mr. RAYMOND UNWIN [F.] : Mr. President and gentlemen, it gives me very great pleasure to have this opportunity of seconding the resolution, and to support the Council, and to congratulate them on the public spirit which they have shown in the advice which they have given to the public in this matter. As the mover has already mentioned, the Town Planning Institute has considered this matter in great detail, and I would like to recall to you some of the points which weighed with them.

They considered that it was of the utmost importance that the relative conditions of atmosphere, climate and latitude of this country and the American towns with which it is often compared should be taken into account. The latitude of New York is not that of London ; it is nearer the latitude of Rome or of Constantinople. In the winter the sun rises 15 degrees above the horizon ; for half the year it does not rise more than 45 degrees above the horizon, while in midsummer it does not rise more than 60 degrees above the horizon. It is quoted by the defenders of this proposal that the rear of the buildings is amply safeguarded by the angle of 63 degrees—I think that is the figure—yet the sun never rises more than 60 degrees above the horizon.

The next point I would draw your attention to is the great difference in the provision in American cities for dealing with the enormous volume of traffic which high buildings cause in the streets. In New York you have ten or eleven main streets, each 100 feet wide, in a longitudinal direction, and you have cross streets at frequent intervals from end to end. Yet those streets are congested, almost impassable, at certain hours of the day. It is absolutely certain that any increase in the height of buildings in London must increase the congestion of traffic, it must put an added strain upon the public services, the water supply, the drainage, the vehicular traffic, for both passengers and goods. Moreover, it must reduce the air space and light, and impede the circulation of air to a very considerable extent, and we have not too much of either light or air in London, considering the nature of our climate, and there is a much smaller amount and intensity of light than is enjoyed in New York. It has not been made clear what advantage we are going to gain from this proposal. I do not believe it has been put forward that any great public advantage is to be gained.

After a consideration of these various points the Town Planning Institute decided that it could not recommend that there should be any increase at present. It did, however, recommend that so soon as the form of future government of Greater London, now under consideration, has been determined, a development plan for the whole area of London should be prepared, and suitable zoning regulations, on the lines of those recently sanctioned for the City of New York, should be prepared and adapted to the special conditions of London, and that effect should be given to those regulations. It is impossible to grant any haphazard relaxations without the greatest danger ; even in the few cases where some extra height might possibly not be injurious it could only be safely allowed on the basis of a careful plan for London, with the regulated use of height zones. The Town Planning Institute recommends that no relaxation be made. The Royal Commission on Housing in Scotland strongly urged legislation to forbid tenements more than three storeys high. The cost per room of high buildings is about double that of the cost in cottages, and that, of course, without lifts. It must be remembered that, once built, the cost of removing these high buildings would be prohibitive. After a thirty-four years' struggle in America they have secured that each window shall open on a space not less than 12 feet wide for four storeys high.

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The higher the building the smaller the open space which will be secured in practice, owing to the increased value of land which follows high buildings. Anyone who has been in America and has explored their tenement blocks must have seen many of the rooms in which there are no windows, or in which it is actually necessary to strike a light in order to find the window. There must be those who have stayed in their best hotels in rooms innocent of sufficient daylight to enable them to dress ; who have had to traverse their congested streets, and tried to get into the Underground about five o'clock or move along the sidewalk at lunch-time, or, worst of all, have traversed a street under that dreadful apparatus known as "the Elevated." To anyone who knows the results of high building, whether in America or elsewhere, who knows how London is the envy of the whole world because of its genius in escaping high buildings, it is difficult to believe people could be so out of date as to want such a change as is now recommended.

This agitation is not confined to England. It prevailed in Germany about eighteen months ago. This is the kind of thing that was advocated for some of the big stores in Berlin, and I think it appeals to such philanthropists as Herr Stinnes and some of those great *Gesellschaften* which you find there. They are anxious, naturally, to have these big places ; it is their point of view ; they want to crowd all these businesses into one store.

We recently saw in these rooms a fine exhibition of American work, and I am glad to say I then had the opportunity of testifying to our admiration for the great work the Americans have done in architecture. But when English people and architects suggest that we should dress up London in the cast-off clothes of New York, I really think it is time to turn. Do not let us copy those things which they themselves have become thoroughly dissatisfied with, and are doing their best to restrain. It is not of London yet that Sir Martin Conway has to say that he would not, if he could help it, live lower down than the thirtieth storey. I do not know that Sir Martin Conway showed great enthusiasm for helping the people in London who might have to live twenty-nine storeys below him, while he enjoyed at that height the air and sun which so satisfied him. This is a case in which we are asked to sacrifice genuine public interests for the purpose of private interests. Let me read you a quotation from our own JOURNAL : "Although it may be reasonably maintained that a height of 80 feet is adequate in thoroughfares not more than 80 feet in width, it cannot be logically maintained that this is an adequate height in streets of greater width than 80 feet, or in positions where buildings face open spaces such as Hyde Park and the Green Park, big squares such as Lincoln's Inn Fields, or the riverside such as the Thames Embankment." [Mr. JOSEPH : Where is that?] It is in the Royal Institute JOURNAL, I think in your own address, in March 1920. Is that what Lincoln's Inn Fields has come down to us for ? Here we have in London a few open spaces left, which have missed the awful spread out of bricks and mortar, and are we actually going to let people who happen to own the frontages to Lincoln's Inn Fields build a high wall of 200 feet round it ? I say it is preposterous to take advantage of these open breathing spaces for London, in the interests of a comparatively small number of people who want to crowd an exaggerated amount of business on to a limited space. I very much hope that this Institute will firmly support the Council in taking what I believe has been the thoroughly disinterested view in protecting London from having foisted upon it ideas which already are out of date in those countries which have tried them.

Mr. ARTHUR KEEN [F.] : As I was the author of the Minority Report of the Building Act Committee I would like to say a word or two on the subject—that is, in support of Mr. Maurice Webb's motion. In the first place, may I say it was only from the accident of there not being time to get other signatures before the report was sent in that my signature alone appeared ? If there had been more time, there would have been

more signatures. I know of two or three who would have signed, and probably there would have been as many as five.

I am told the public say that we architects object to higher buildings in London simply on artistic grounds, and that we are not mindful of or that we know nothing about the economic considerations involved. That is not at all true ; we are very much concerned with the economic considerations, but I should be sorry if it could be truly said of this Institute that in considering such a question it did not lay full stress on the architectural considerations as well. By the terms of our first Charter we are concerned, as members of this Institute, with the domestic convenience of citizens and the public improvement and embellishment of towns and cities ; and therefore it is perfectly clear that the beauty of the City of London is one of our first concerns. I think nobody will dispute that continuous lines of high buildings in any street must tend materially to destroy the beauty of this city. You have only to walk down Victoria Street, Westminster, for a proof of that. It is a wide street, it is lined on both sides with high buildings, generally speaking of a uniform height, and it is one of the most depressing streets in London, uninspiring and demoralising to a degree. The fact is that light is essential to beauty. You cannot have beauty without light, and these lines of high buildings shut out the light and destroy the beauty. The only possible ray of interest in the whole of Victoria Street, as far as I remember, is the church and churchyard about half-way down the street which afford some relief to it. London is an intensely interesting place from the point of view of the artist ; it is haphazard and picturesque, and full of variety ; but it is an extremely beautiful city. I suppose that London depends more than anything else for its particular beauty and character on the sky-line, and the fact that it is so readily seen. The sky-line is being rapidly built out. Take Regent Street : the whole character of Regent Street is being changed for the worse. Let it be understood that I say nothing about the architectural character of the buildings. I am speaking only of the height and the continuity of height. King William Street in the City was a most interesting street—it had well-designed, well-composed buildings, but it has been almost completely transformed. Tall buildings, some of them extremely good architecturally, have been and are being erected on both sides of that street : the street is being spoilt. The same may be said of Moorgate Street. We have been told again and again that such a position as Gracechurch Street, where it looks down on London Bridge, is particularly suitable for high buildings. A high building has been erected facing London Bridge approach. I come over London Bridge every day, and I am familiar with the view which is presented as one walks across the bridge from south to north. It used to be one of the most interesting views in the City : St. Magnus Church on the right, with the green trees at the base of it, and the Monument and Fishmongers' Hall in the distance, with the sky showing over low buildings. Now a high building has been put up, shutting out the whole sky like a wall, and destroying the picture. I do not blame those who have erected that building ; they are acting in their own best interests ; but that is the kind of thing which is inevitable when people are allowed to put up high buildings, and it is the thing which will ultimately spoil the beauty of London, upon which I set very particular store. We know the building owner will take advantage of everything which the Building Act will give him, and there is no control over him apart from that exercised by the Act. He will take full advantage, even to the extent of putting up buildings 120 feet high throughout the City, if you will allow him.

In the matter of light it has been pointed out by Mr. Unwin that it is not fair to compare New York with London, because it is more in the latitude of Rome or Constantinople ; I think, as a matter of fact, it is in the latitude of Naples, which is about 700 miles farther south than London. The conditions which prevail in New York are different from those that prevail in London, and they permit things there which would be intolerable here.

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As for the proposal for a 120 feet limit in the City, to my mind it hardly bears speaking about. There is a population of, I think, half a million in the City every day; and that the greater proportion of these people should be condemned to work by artificial light above the ground is terrible to contemplate. As to traffic, in London it has already reached such a point that we do not know how to deal with it. It makes my heart ache to go to the places where the trams and buses start from and see the struggle people have to get home. They have started early in the morning and have been working all day, with perhaps none too much to eat, and to see the struggle they have to get home again is intolerable already. If we double the accommodation for workers in the City, I do not know what will happen in the matter of traffic.

We have been told that, as people find it difficult to get home, it is desirable for them to be housed near London's centre, and we can solve the housing difficulty to some extent by means of buildings of a height of 150 feet. We already have in London working-class dwellings which are five storeys in height, and it has always been a matter of wonder to me how young children who live in these places, and how their mothers, especially expectant mothers, can climb up those five storeys every time they return from going out. I suppose there are many here who have young children of their own, and I do not know how they would contemplate the idea of their children going unattended to their homes in lifts to the top of buildings 150 feet high. I do not object necessarily to a high building if it is in its right place and if the conditions are suitable. One knows of plenty of cases in London where high buildings are perfectly right. Such a building, for example, as Whitehall Court—I do not know about the back of it, but the side which you see towards the river—is a fine object and fits into the general view. The Hotel Cecil is another instance, and that, again, comes into the general view and is not aggressive. Then there is the Prudential building in Holborn, where the central block forms a huge tower which constitutes an extremely fine item in the view down Holborn. Burlington House, in Piccadilly, is effective. High buildings can be erected properly under the existing regulations. It rests with the County Council. In my judgment, they have hitherto exercised their discretion in a reasonable way, and will, I trust, continue to do so. At any rate, I hope they will take into account the special circumstances of each case. And I hope that not the least of the things they will take into account in all these matters will be a consideration of the amenities of London from the point of view of the artist and the architect.

Professor ADSHEAD [Vice-President] : Mr. Keen has mentioned that his was the sole signature on the Minority Report, due to the fact that the time for sending it was very short, and he was not able to get other signatures. I was a member of that Committee, and I opposed in every way possible the excessive heights which were suggested in the report. It was only because I happened to be in Newcastle at the time that I was unable to sign it. I am a member of the Art Committee, and I have very much pleasure in further endorsing the report which was sent in by that Committee. I would like to refer to one or two matters of a very general and regional aspect, as one who has studied this question from its transport and town-planning points of view.

Mr. Unwin has dwelt on the conditions obtaining in New York, and the points for and against high buildings there. The references to New York have been thoroughly ventilated in the Press. I myself spent ten weeks not many years ago in New York and had an opportunity of making special investigations into the conditions pertaining to high buildings, and the conditions as to high domestic buildings, but I shall not dwell upon these now. What I propose doing is to say a word or two in support of a general principle—the all-world principle—that obtains to-day; and that is to extend cities rather than to contract them. This principle has got hold of America, and it is now becoming the

recognised principle of town development, that a city should extend laterally rather than vertically. Take the policy of the County Council. Who would suggest that a mistake had been made when they departed from the policy of erecting high buildings in congested areas, and took people out by the trams to more healthy and salubrious situations? I have been concerned in housing for the working classes on certain estates, and one of the principles laid down there was that no buildings for the working class should be more than three storeys in height, and for the very reasons which Mr. Keen suggested. I agree with Mr. Keen that it is ridiculous to consider the question of housing the working classes in buildings which will be so high that the homes will have to be reached by lifts.

Then take the importance of the transport question to-day, and the facilities which are afforded compared with those of ten or fifteen years ago. Consider the way in which our big offices are now occupying sites on the outskirts of the centre rather than in the centre. Take the South side of the Thames—Stamford Street. In the last ten years we have had great buildings like W. H. Smith and Son's printing works, crossing the river to sites where they can obtain more elbow-room. Take the Government offices, the County Council offices, which are now across the river; the Labour Offices at Kew, the Pensions Offices at Acton. This segregation of buildings is one of the most striking features in modern commercialism. Let me refer to a paragraph in Horace Cubitt's *Buildings of London*, dated 1911 in which the author says: "It must be remembered that the tendency has been towards a reduction in the height of London buildings. At the time of the passing of the Act 90 feet was allowed under the provision of the London Council 1890." And from that we get to 80 feet. Are we going back to 120 feet? Is London going to be the one reactionary town to reverse this world-policy of spreading laterally? I would remind you that at present the height to the under side of the cornice in London is only equalled by one city in Europe—Vienna. It may be interesting to some of you to know that the height to the cornice in Berlin is 72 feet, in Cologne 65 feet, in Dresden 72 feet, in Düsseldorf 65 feet, in Edinburgh 60 feet, in Hamburg 78 feet, in Munich 72 feet, Rome 78 feet, Stockholm 72 feet, Paris 65 feet, with two storeys in the roof. So we are not very badly off with 80 feet. And even then we have the County Council, who have it in their discretion to allow us to put up higher buildings in selected places suitable for their erection. I agree with Mr. Keen in what he said about the suitability of high buildings in such places as on the Thames front, provided you look after the backs. I also agree with the clause in the Art Committee's Report in which they admit there are certain sites in London where high buildings might suitably be erected. But I hope these sites will never be the subject of regulation or bye-law; but that when building on such sites is allowed it will be on spots indicated on a plan of London such as I hope will before long be made.

Mr. DELISSA JOSEPH : I presume, sir, that if I speak to the present motion it will not disqualify me from speaking later.

The PRESIDENT : No.

Mr. JOSEPH : Then I will make a few observations now. At the present moment the discussion is around the action of the Council. After the years that I have been a member of this Institute I should be very loath to vote against an act of the Council, even though I might disapprove of its action. That is why I feel that the freedom of discussion which might have been possible on the general terms of my motion is necessarily lessened upon the motion as it stands. But I will deal with a few of the points which have been discussed. I can soon dismiss the diagram which is on the wall by saying it is easy to discount a new thought by reducing it to absurdity. It has not been in the mind of anybody who has been discussing this matter seriously that we should build rows of houses 120 feet in height in streets which are only 20 feet wide. Nor was it contem-

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plated that a diagram would be prepared which would omit to show the 80 feet height and two storeys in the roof to which we are entitled under the Act. The particular buildings in Paternoster Row and Bouverie Street which have been shown by the London Society omit to show the height to which we may go under the present Act. Therefore the sketch gives a fictitious impression of the effect of buildings of the kind in a narrow street. Mr. Webb and Mr. Keen have been fair in the presentation of their views, and the other speakers have dealt with it from the special points of study to which they have devoted their lives. But it is scarcely fair to say we have not given sufficient consideration to the matter, seeing that it has taken us eighteen months to consider and report.

Although Mr. Webb dissociated himself from the tendency to associate our work with "sky-scrappers," his remarks were largely directed to the New York practice; and when we talk of that practice we have before our eyes and minds the New York sky-scrappers. There is little doubt that the adverse criticism which has been offered as to sky-scrappers is unanswerable. But we are not seeking to put up sky-scrappers. Sky-scrappers are buildings of anything from 500 to 750 feet high. The highest building recommended by our report is 150 feet; therefore the criticisms which have been brought against higher buildings for London by comparing them with the sky-scrappers of New York do not appear just.

I recognise, by the enthusiasm with which the remarks of previous speakers were received, that I am addressing a meeting whose mind is already largely made up, but I have a great belief in the justice and fairness of my brother architects, and I feel that before they come to a decision on this matter they will weigh up all the considerations involved. This is not a movement in which anyone has an axe to grind. The origin of it is very simple. Two years ago an article appeared in *The Times*, in the course of which the writer said the demand for accommodation in Central London could not be met. How was the difficulty to be surmounted? Obviously the business parts of London could not spread outwards; therefore, in order to accommodate the business of London, it might be necessary to modify Acts of Parliament so as to allow buildings to be extended upwards. That idea set fire to a train of thought which had occupied me for some years, because it had fallen to my lot, as an architect, to design five blocks of buildings facing Hyde Park, and two blocks facing the Embankment, during the preceding few years, and I had been impressed with the adequacy of the opportunity which was afforded me for putting up buildings on a proper scale in those fine open positions. And when I saw this thought thrown out in *The Times* I took the opportunity of writing three or four letters developing the idea. Those letters called forth replies, and in the middle of the discussion an extraordinary thing happened. Sir Martin Conway addressed the London Society—conservators, as they claim to be, of the amenities of London—on sky-scrappers, and suggested it would be well to build in London sky-scrappers 500 feet high. That suggestion seized the popular imagination to such an extent that the moderate issue of higher buildings opposite parks, the riverside, and other open spaces and in wide thoroughfares was almost torpedoed; and the movement, instead of running on moderate lines, has been seriously prejudiced by the disproportionate demands of Sir Martin Conway. When the correspondence had gone on for some time, I began to ask myself: "Am I entitled to carry the matter on in this way further? Is it not right that I should bring the question before the Institute?" And I suggested to the then President that I would be prepared to read a paper on the subject. I read the paper. Mr. Austen Hall had read a paper on the question of cubical contents. The Council then appointed a special committee to consider the matter, more particularly from these two standpoints. That is the genesis of this movement, and you will see that at the earliest possible moment I brought it under the purview of the Institute, and ceased to deal with it as an individual. The Council appointed on this com-

mittee a typical list of members, practical men whom they knew were doing solid current work. We took our work very seriously. We said: "We will first devote ourselves to higher buildings, then to cubical contents." We went into great detail as to the various aspects of these questions. Having got together a large amount of information, we thought that before we made our report to the Council we would carry our investigations further; and we adopted an unusual, perhaps, but I think you will admit the very thorough course of deciding to appoint a deputation of our Committee to attend confidential conferences with public bodies who were interested in various aspects of this question. The deputation attended on the Building Acts Committee of the London County Council, the Fire Brigade Committee of that Council, the City Lands Committee of the Corporation of London, the Society of Medical Officers of Health, and subsequently the Incorporated Association of Retail Distributors. Then at last they thought they ought to meet the London Society. We thought we would give them an opportunity of meeting our position.

We sent in our report to the Council, and it has been before you in a recent number of the JOURNAL, so I will not take up your time in going into it in minute detail. As regards one point made by Mr. Webb, it is not correct to say that the only support we had was the support of the Retail Distributors' Association. We got support from the Medical Officers' Association and the City Lands Committee. We got support from the Retail Distributors very readily, because they represent the great stores in London—a sort of union of the great stores of London, who are, quite naturally, anxious to develop their businesses. But it is wrong to say that the movement has for its purpose the enabling of the great stores to increase their business by having higher buildings. It is urged as a serious means of giving an opportunity to banking, insurance, shipping, and the purely commercial side of London, because the one square mile of the City—the magical area—is the place required by these great businesses, which are national concerns. It has been shown that the City of London cannot accommodate all the business which has to be done there; by some means extra space must be found, and it can only be found in the City of London by raising the buildings. Suggestions are welcomed by the City Lands Committee, which has the care of the amenities and requirements in question, and those cannot be lightly thrown aside. We are not asking for rows of streets with buildings 120 feet high or 150 feet high. We are asking that the County Council, which has the power to allow buildings more than 80 feet high if it thinks it wise, shall let it be known that in future it will allow them more often than it has in the past. We have to remember that all leases in any one thoroughfare are not likely to fall in simultaneously.

You have had the fact pointed out to you that London and New York are not placed the same geographically; but they have very much the same characteristics with regard to the area required for business, and I harp upon business because that is the staple of the country. The business of London requires more space in these central areas which are chosen as the centres of trade. For example, the City merchant must be near the Exchange for his trade. Take the case of the stores; do you think that if any of the great stores of the West End wished to increase their business accommodation they would go into another district? They will remain in the same place, and under present circumstances they must either be content with what they have or dig underground. One or two speakers said we have only considered the commercial aspect. There would be no apology necessary if that were so, but I deny it; I say commerce and finance are the background of all human activities in such a city as London, and without commerce there would be no demand for architecture and there would be no work for us. It is not a selfish proposition, because I have pointed out more than once that, apart from the good you may do in providing accommodation for the individual and for the needs of the City

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and the centre of London, you will be creating a new basis of assessment, because every higher floor will be a subject of a new assessment, and that will be considerable ; it will form a security on which local authorities can borrow capital, and with that capital they can do the very thing we want to see done, and that is widen the thoroughfares, for which they have no funds at present.

With regard to fire escape I will not trouble you at length ; it means one or two additions. The fire escape problem has been disposed of in other places—Liverpool notably, where the Royal Liver building, some 350 feet high, is an example. A dry pipe runs up from the floor to the top part of the building, and it has a nozzle at the bottom. When a fire occurs, the fireman, instead of carrying up a long hose to the scene of the fire, attaches the hose to this dry pipe, turns the water on, and runs up to the spot where the fire is and at once plays on it. If the force of the water will not carry it more than 80 feet, there is an electric pump which will take the water at that point and throw it higher, just as it does to the top of St. Paul's Cathedral.

With regard to design, it seems to me that the matter is extraordinarily simple. If the Americans can produce, as you saw recently by the exhibition in this room, exquisite buildings at the enormous height of even 750 feet, it is grotesque to speak as if British architects cannot produce buildings quite as beautiful 150 feet high.

But this movement has not been idle ; it has produced improvements already. The permission to build buildings to 80 feet to the top level means that another floor 10 feet high can be put in these restricted buildings. There is a striking instance of that. The architect of Harrods' Stores tells me that the immediate effect of that little concession is that Harrods will be able to add four acres of floor space to their existing buildings without buying a square inch of additional land. While we have been talking of higher buildings the County Council have already accepted the principle on a small scale, because there are three instances of it. There is the instance mentioned by Mr. Keen, where Mr. Jones has put up a building in Gracechurch Street, which is 110 feet to the top of the cornice, and the roof is 30 feet above that, making 140 feet altogether. And there is the building put up at London Bridge by Sir John Burnet, and that is 102 feet to the cornice level and 120 feet to the roof. I believe Sir Edwin Lutyens has also obtained a concession for a big building in Finsbury Circus.

I must reserve my other remarks until I submit my resolution to you. What we should have liked the Council to do would be to send back our report, with criticisms and suggestions for emendation, and to have asked us to reconsider it in the light of the facts they might have adduced. But in view of their having rejected it, we cannot ask them to reinstate it, and we cannot, therefore, ask you to condemn the Council for having condemned it. But if I bring on my resolution, I shall ask you, shortly, to consider another aspect of the matter which may, perhaps, appeal to you.

Mr. ANDREW T. TAYLOR [R.F.], L.C.C. : This is a subject in which I am very much interested. I come here in a dual capacity. I have been a member of this Institute for forty-four years, and I am therefore entirely in sympathy with the aspiration of the young members of the Institute and their desire for freedom in designing buildings of every description. But I have also to take a wider view of the case, in connection with my duties on the London County Council as a past-chairman of the Building Acts Committee and a past-chairman of the Improvements Committee, intimately connected with the Fire Brigade work ; and as chairman of the Historical Records Committee of the Council I have many points from which to view this question, perhaps more than some of you, and therefore you will forgive me if I try to take a broad view of this problem.

Many of the points have been taken up, and perhaps you will allow me to enumerate them in a word or two. We have to

deal with the traffic problem, and that is an important thing on the Council. There are 15,000 people living in the City of London, but nearly 350,000 come into the City to work, and you know that every means of transport is congested—trams, buses, tubes, railways. One trembles to think what double the number coming into London daily would mean, and that is what might happen if these higher buildings were allowed ; it would be a sheer impossibility to get the people in and out of London. We want to separate the people, not to group them in the City of London, and with that in view we have tried to spread London. I have asked this question several times, but I have never yet got an answer to it : Why do you not first of all raise those low buildings which are in and around the City to a height of the permitted 80 feet before you ask for buildings of 150 and 200 feet ? In Bloomsbury and in other places you will find hundreds of buildings not more than 50 feet high ; why not raise them to the full extent ? Then you will nearly double your accommodation, without creating congestion.

The second problem is that of the health of London. As has been pointed out, we have very little sunshine and a good deal of smoke and fog. If you have high buildings, like the one shown in this sketch on the wall, you will never get sunshine into most of the streets. A friend of mine, talking to the manager of one of the largest retail stores, said to him : " You want high buildings in Regent Street, but there is now sunshine on both sides of the street, and people like shopping in the sunshine." He said : " We don't want the sunshine ; it is spoiling our goods in our windows and we have to put up sunblinds." That is the point of view of the merchant. He does not want the sunshine. But people like the sunshine, and they will much more enjoy looking at the dresses in the windows of a sunny street than in one that is sombre.

A third point is the amenity of London. Take one of our more recent streets—Kingsway ; that is 120 feet wide, and I think you will admit that the buildings on each side of that are high enough. They are 80 feet and 100 feet to the top of the roof. If they were double or nearly double that height, imagine what Kingsway would look like ; it would be a gloomy and would seem a narrow street, instead of the spacious one it obviously is now. Again, Regent Street before long will be entirely rebuilt to a height most persons will think sufficient. Allow buildings of 150 or 200 feet high, and the whole symmetry of design and the amenity of the street will be spoilt.

I now come to the chief thing I want to speak about. It has been mentioned by Mr. Joseph. It is that of fire protection, a very important point ; certainly in our case the safety of life is one of the most important points. I would like to traverse some of Mr. Joseph's remarks to-night. Our Fire Brigade is quite able to tackle fire in high buildings if you give them the apparatus ; but the whole apparatus of the Fire Brigade of London has been planned to suit the present conditions, that is to say, those buildings which are regulated by the Building Acts. They cannot tackle buildings 150 or 200 feet high. For those they would want much heavier hose and stronger pumps and larger fire engines, as well as larger stations to house them in. In New York to-day they have high-pressure fire-pipes or mains all through the streets specially for fires in that class of building. That has cost millions in New York, and if you have them in London to-day it will cost you millions, which would mean an increase of 1s. or 1s. 6d. in the £ on your rates. Are they not high enough already ? If you were to attempt to put on pressure of water to deal with these high buildings without special pipes and plant, your pipes would burst and your taps would not be able to stand the strain. Mr. Joseph mentioned the dry pipe system. It is true that is the system in New York, but they have found there that in a great fire they fracture and break, so that just at the time they are depended on to do their work they are of no use. It has been found in the fire brigades in almost all large cities that while fixed fire arrangements are useful to a certain extent, you have to depend in the last resort on the mobile fire

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appliances—that is, the fire brigade and their engines. If there is a fire in the lower section of one of these high buildings, how will the firemen get up to operate on the higher parts? They cannot do it, and the result is that, if a great heat is generated, the dry pipes fracture. It is not a question of the existing Fire Brigade—I think there is no finer fire brigade in the world than the London Fire Brigade; but you will have to revolutionise the whole system if you want to utilise it for higher buildings.

The Building Acts Committee of the London County Council is no hard-and-fast and hidebound committee; we are open to listen to anything which you may suggest to us. We have a discretion to allow certain things beyond the Building Acts, and we are doing it. You have heard of some of the things we have allowed in certain positions—buildings higher than 80 feet. We have agreed that, instead of 80 feet and a sloping roof, and two storeys in the roof, you could have, if you set back your wall sufficient to come within a certain angle, buildings up to 100 feet with a flat roof. There has been much misunderstanding about a further concession in regard to buildings of the warehouse and departmental type. Mr. Joseph has taken considerable credit to himself for bringing it about, if one may judge from a recent letter in *The Times*. We have been considering this matter for some time, but it was brought to a head by resolutions we received from the Council of this Institute. We took immediate action; we conferred with our Fire Brigade, and acted. What we have done is this. It does not add an inch to the external height of the buildings; formerly it was 60 feet, and recently we raised it to 65 feet to the topmost floor, with unlimited ceiling space. Now we are permitting 80 feet to the topmost ceiling and you can get another floor in. It is immaterial to me how many floors you get, as long as you do not raise the total height of the building. We are only too anxious to let people have the other floor if they desire it.

Mr. Keen pictured a very pleasant scene in the vicinity of London Bridge, and I agree. But you know a new building is contemplated on the site of the old Pearl building. The first plans we had went up to a great height. I said to the illustrious architect: "You will be much higher than the beautiful tower of St. Magnus; what is to become of that?" He said: "Oh, that must go." We also had some plans for a building in Finsbury Circus going 200 feet up; in fact, we had a plan for one of 400 feet, with offices to the top. We have now got it down to reasonable limits. We are willing to consider exceptional cases; but we do not want these to be put formally into Building Acts. We want to have discretion, and you will find that we shall exercise that discretion reasonably.

Mr. DAVIDGE: I move that the motion be now put, sir. In doing so I would say that Mr. Joseph has invented the definition of a sky-scraper as a building over 500 feet high. That would mean there are only four sky-scrappers in the world.

The PRESIDENT: Does anybody second that?

A MEMBER: Certainly.

The PRESIDENT: I now put to you the motion, which is:

"That this general meeting of the Royal Institute of British Architects approves the action taken by the Council in connection with the Report of the London Building Acts Committee."

There voted for 79, against 8.

The PRESIDENT: The motion is carried.

Mr. JOSEPH: At this late hour, I shall propose to submit the resolution in this form:

"That this meeting approves the general principle of allowing buildings to be erected in certain positions to a greater height than is at present the practice, subject to proper safeguards as to construction, fire escape, and fire attack."

The purpose of this resolution is not to commit you to any special heights; it is to put the matter rather back to the position it was in during the early stages of the investigation by the Building Acts Committee, and to enable the height and surroundings to be a subject of further study. Those who have

worked with me for the last eighteen months, conscientiously, and, we believe, in the public interest and not adversely to the interests of our own profession, think that you should not unreasonably be asked—whilst approving the action of the Council in rejecting specific recommendations made in our report—to give us some acknowledgment and encouragement, and still leave this important topic open for further consideration, by passing a resolution in simple and innocuous terms, by which the principle of higher buildings is accepted, subject to further investigation and subject to proper safeguards. I put it before you, not merely on the ground that I think the work of this Committee should have further thought before it is finally pigeon-holed, but on broad lines. It is in the public interest; it is in our interest. What we are asking is something which will react favourably towards the whole community. Therefore I move the resolution which stands in my name.

Mr. AUSTEN HALL [F.], in seconding the motion, said: I did not know until this morning that I should be able to come to this meeting, but what has been said covers, I think, the ground on all points. This is not a question of a vote of confidence in the Council; it is a question of obtaining an expression of opinion from members on the whole subject of higher buildings. I have, therefore, no hesitation in supporting Mr. Joseph's suggestion, which is to approve the general principle of allowing buildings to be erected to a greater height than 80 feet, subject to proper safeguards. It seems a safe resolution to pass. I have a number of notes on points which I will not go into now. Various members have said repeatedly that no attention whatever has been given to the question of fine architecture in relation to increased heights of buildings. It has been my privilege to look at this subject in other countries, particularly the United States and Canada. We have heard much as to the latitude of New York which is very misleading; but the latitude of Montreal and other cities in Canada is very much the same as ours, and in the degree of sun also. Yet in Montreal 120 feet is allowed, buildings with ten storeys, and the results are eminently satisfactory. Professor Percy Nobbs has designed some very charming buildings in Montreal, of a standard height of 120 feet. The conditions in Montreal so closely resemble those in London, and the results are so delightful, that to say it is devastating to architecture to build 20 feet higher than at present seems ridiculous to those who have seen 120 feet high buildings in suitable positions—I do not agree they should be in the City. It would be a tremendous stimulus to architecture if in certain places, notably the Embankment, we could get a renaissance of architecture. To say that that side of the question has not received attention is not correct. The work of this Committee has been unduly prolonged owing to the amount of information it had to collect, and it has covered much ground. When the matter was broached to the Council it was sent as a suggestion of what could be done; it was disappointing to have it turned down, and to have the Committee abolished without a further reference being asked. I felt disappointed that the useful results which could have been obtained will not now, perhaps, be possible.

Owing to the lateness of the hour, I will not go into the points I have made a note about; but I beg those who have seen buildings 120 feet high to consider how satisfactorily they can be designed, and how interesting they are when in proper relationship with the other buildings in the street.

Sir ASTON WEBB, P.R.A.: I could not see what Mr. Delissa Joseph's resolution meant, but he has told us in his speech what it is; and I must confess that I shall vote against it. He said that it was to leave open this question of higher buildings. I think after we have spent the whole of this evening and decided the matter so emphatically, that we should shut down this question. Let it be distinctly understood that this Institute is averse to increasing the height of buildings as suggested in the Committee's report. We are perfectly content to leave it in the hands of the County Council, as it has been hitherto. I

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happened last night to be reading Mr. McCurdy's translation of Leonardo da Vinci, who had a way of writing down things which occurred to him. He said: "Let the street be as wide as the universal height of the buildings." That is what Leonardo da Vinci said in his time, and it seems to me we could not say anything better at the present day.

There is one other thing I would like to say: there has been a good deal of talk about the County Council's laws restricting the heights of buildings, etc., which is not done in other towns in England. But why did they bring in that law? I think the reason was Queen Anne's Mansions. I have the misfortune to live almost under the shadow of them, and to think of Queen Anne's Mansions being duplicated all over London is sufficient, I think, to condemn the idea. Queen Anne's Mansions towards the street is bad enough, but Queen Anne's Mansions at the back towards the Park is very much worse; it is a conglomeration of brick walls and windows, shapeless and hideous. It is not altogether the fault of the designer; he got into great difficulties at the back; the Guards threatened him with all sorts of things; he had to arbitrate, and the arbitrator made him put in all that white glazed brick. The beautiful park is spoilt by the view of Queen Anne's Mansions; the view from Buckingham Palace generally is spoilt by the same cause. If you put up buildings like that, you will destroy the amenities of London. We cannot pull down the Mansions, but surely we can insist that there are no other buildings of the sort put up in London in our time. If we do not do that, we are not worthy of our name as architects of a great city: we shall go down to posterity condemned, and very properly condemned.

Mr. OSWALD MILNE [F.]: I think it would be most unfortunate if it were to go out that this Institute supports the London Building Act as to the heights of buildings as the regulation is at present. Very few of us think that the London Building Act at present is a sound thing; it extends to all parts of London, the City and the residential parts alike. We can only build to 80 feet high, with two storeys in the roof; that is too high in residential parts, too low in others. But for the idea to go to the public that this Institute accepts the Act seems to me to be a reactionary and very conservative policy.

The other thing which seems to me absurd is that this Institute should say (I know our Council uses its powers extraordinarily well) that they endorse the power of the County Council to turn down proposals for high buildings in some cases and allow them in others. That is not business. If a man buys a site, he ought to be in a position to know exactly what he can do with it. At present he buys it and hopes the County Council will let him go higher, but he knows they have discretion to prevent it, and he is put to much trouble and expense before he finds out what he can do on the site. We were told many years ago that before a man built he should sit down and count the cost. But in London he cannot do that; he is entirely at the discretion of this County Council committee. The business man knows he is "up against it"; he will think that architects are reactionary people who do not want to help him, and that if he is to get what he wants he must, in certain districts, go to somebody who is not a qualified architect. We do not want skyscrapers, but we do want to think the matter out and say how the community who want higher buildings can get them in a reasonable way. If you would not limit the height to 80 or 100 feet, but allow within a certain angle much higher buildings, it would encourage business people. It would encourage big companies, especially in the City, because that is where big buildings are required. It would encourage the purchase of large and deep sites where buildings can be built with towers. Is it better to have limited buildings, with many working in them under the level of the street, than to have fine buildings with towers where there is fresh air and light? These buildings can be erected without obstructing light and air. I think we architects ought to be the leaders and guides of the community with regard to building matters in every way. If we in this Institute accept the idea

that the limit of height of buildings as it at present stands is the last word, I think we will be regarded as a reactionary and conservative profession.

Mr. W. R. DAVIDGE: I wish to oppose the passing of this resolution. Our Council has considered the question from all points of view. It has already achieved a distinct improvement in the London Building Act. We are not in the hands of cast-iron rules, and it should be pointed out that the London County Council have full power to deal with each case on its merits. I protest against the proposal made by Mr. Joseph's Committee that we should have 120 ft. buildings all over the City. Here is an American paper, published by the National Housing Association of New York, which, dealing with the question of high buildings in London, refers to this agitation as follows. It says: "The chief advocate of this course is Mr. Delissa Joseph, a London architect, who seems to return to the attack with great pertinacity, having urged two years ago similar proposals. It is rather extraordinary, in the face of the experience of such cities as New York, Chicago, and other American communities of the very detrimental effects of unduly high buildings, that London, which has been free from this blight, should at this late date be in danger of having it inflicted upon her." And here is the opinion of Mr. Hastings, our newly elected Royal Gold Medallist, in a statement for the Heights of Buildings Commission of New York City. He says: "Where I believe we American architects so often make a mistake is that we present our case as an appeal for aesthetic consideration and for the general appearance of a city. In my opinion it is not a question of art, but of sanitation and of justice and of law."

Mr. Hastings goes on to say: "The argument that New York is on a narrow island is without effect when we realise that the lower and narrow part of New York, within a stone's throw of Broadway, is not rebuilt, and much of this property is only three or four storeys high."

The Council of the R.I.B.A. has had the facts before it and has decided on a sound course of action—namely, that every case must be considered on its merits, but that there is no general case for higher buildings. It would be lamentable if we were to pass this resolution, which would be going back on the resolution we passed earlier. It may look harmless, but I know harm will be done by it if it goes through. It will be advertised, and wrongly advertised, that the Institute is in favour of higher buildings everywhere. You know how falsely the campaign of the Committee was represented as the policy of the Institute, and you know how that false report was brought about; it was by premature publicity by members of this very committee.

Mr. JOSEPH: On a point of order. This statement by the last speaker with regard to premature publication has been dealt with in the report of the Art Standing Committee, which is before you; and the Building Act Committee, having had that report, passed unanimously a resolution, which was forwarded to the Council, repudiating the statement that any campaign through the Press had been organised or conducted or influenced by the Building Act Committee. The only communication of an official character sent to the Press was one I submitted to you. Though the report had been issued, it had not been considered and approved by the Council. Therefore I ask you to call upon the last speaker to withdraw.

The PRESIDENT: I would point out that it is irrelevant to the present discussion.

Mr. DAVIDGE: On the question of fire protection mentioned by Mr. Joseph, the Chief of the New York Fire Insurance Exchange says: "We have had no tests of the value of standpipes in tall buildings. The difficulty is that no human being could withstand the heat, which often rises to 1,800 degrees." And Mr. John Kenlon, Chief of the New York Fire Department, says that he considers 85 feet to be the ideal limitation on height. I am content to accept the evidence of New York. I am sure the meeting will do well to put itself in the hands of the Council rather than in the hands of the popular Press, which

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will not always stick to the facts, especially in technical matters such as that now under consideration. I shall vote against this proposal.

Professor BERESFORD PITE [F.] : I can only say that this is not a new question. Have we not all lived in London and practised in London and thanked God for the low streets with which London is surrounded; have we not thanked Him for the rays of light, of sunlight that a prescriptive right allows to penetrate into the City? I worked in City offices for many years, and I view with alarm the fact that Mr. Joseph is blind to the pointed arguments which are addressed to the heart of this question. He has not answered one of the serious questions about the light, the amenities of the City, the escape from fire—in fact, human life. The stand-pipe fallacy does not touch the root of the matter. You will have huge populations in positions inaccessible to the fire brigades; and I hope the expression of opinion we have given this evening will be taken as conclusive, and that we shall not allow the slightest doubt to be felt by the public at large as to the attitude which the Institute takes.

Mr. W. E. VERNON CROMPTON [F.] : The motion makes no reference to proper safeguards with reference to traffic or to services or architectural amenities; and there must have been some definite reason for leaving them out. For that reason I have the more confidence in voting against this resolution. Lastly, I think it will help us to look at this matter in proper perspective if we realise that the question of high buildings in London has a definite relation to what we are dealing with in London, and that is congestion of street traffic. You cannot separate the one from the other: they are interlocked. Therefore the only way this problem can be dealt with scientifically, organically, and in a reasonable manner is to adopt the suggestion mentioned by Professor Adshead: we must have a plan of London, properly done, and then we shall be able to make up our minds as to whether we can allow certain buildings higher than at present on certain positions.

Mr. JOSEPH : I waive my right of reply, in view of the late hour.

The PRESIDENT : I do not wish to deprive you of your rights in the discussion.

Mr. JOSEPH : I wish to waive my right of reply. I could reply, and at great length. After the patient way in which you have listened to me I will not inflict another speech upon you.

The PRESIDENT : The resolution is :

"That this meeting approves the general principle of allowing buildings to be erected in certain positions to a greater height than is the present practice, subject to proper safeguards as to construction, fire escape and fire attack."

12 voted in favour, 51 against.

The resolution was lost.

Mr. G. E. Pearse [A.] has been appointed to the Chair of Architecture at the University of Witwatersrand, Johannesburg, where he desires his correspondence to be addressed.

Mr. Andrew T. Taylor [F.] a member of the London County Council, has been appointed a member of the following committees of the L.C.C.: Building Acts Committee, Establishment Committee, Improvements Committee, and the Appeal Committee.

Major Douglas Wood, F.S.I., A.R.I.B.A., the Housing Commissioner at Nottingham, in charge of the housing schemes in the ten Midland counties, forming the Regions E. and F., is leaving Nottingham on 31 March, when the Regional Offices finally close, and is taking up a special appointment at the Ministry of Health, Whitehall, S.W.1.

## Obituary

HERBERT A. SATCHELL [F.]

It is with great regret that the announcement of the death of Mr. Herbert A. Satchell has been received by members of the Institute, and especially by members of the Practice Committee, on which he did such invaluable work. Mr. Satchell was elected an Associate in 1888, and was awarded the Essay Medal in the same year, the subject being "The History of the Developments of Church Planning from the Beginning of the Christian Era." He was elected a Fellow in 1906. Mr. Satchell died suddenly at Torquay on 15 March, after a very short illness.

HOLMAN : LIEUT.-COLONEL G. E. [F.], of the firm of Holman & Goodrham, on 5 March 1922.

ELWES : R. G. [Licentiate].

VASEY (J. M. H.) [Licentiate], died on 3 March 1922.

## Competitions

### AUCKLAND WAR MEMORIAL COMPETITION.

The second set of Questions and Answers has been received, and is available for inspection in the Library.

### R.I.B.A. COLOUR COMPETITION.

Questions and Answers may be seen in the Library.

### COMPETITIONS OPEN.

Auckland War Memorial.  
R.I.B.A. Colour Competition.  
Dundee War Memorial.

The conditions and other documents relating to the above competitions may be consulted in the Library.

## BOARD OF ARCHITECTURAL EDUCATION.

### STUDENTS' EVENING AT R.I.B.A.

On Wednesday, 15 March, a highly successful Students' Evening was held at the Exhibition of Architects' Working Drawings in the Galleries of the R.I.B.A., 9 Conduit Street, W.1. Mr. A. J. Davis and Mr. C. H. Gage were present and explained the special points of interest in the *Morning Post* Building, while Mr. Dennington, representing Mr. Ralph Knott, gave information about the New County Hall. There were about eighty present, and several important questions were discussed.

The Board of Architectural Education have made arrangements for holding the Exhibition annually, when work representative of all classes of architecture will be exhibited.

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### THE INTERNATIONAL BUILDING TRADES' EXHIBITION, OLYMPIA, 1922.

The attention of members is specially called to the programme, sent out with the present number, arranged by the Architects' Welcome Club in connection with the International Building Trades' Exhibition at Olympia (11-27 April inclusive).

Members are *particularly requested* to make personal use of the Special Card of Admission which is enclosed with this number of the JOURNAL. Through the generosity of the organisers of the Exhibition the use of these cards will materially benefit the funds of the Architects' Benevolent Society.

### MODERN BUILDING EXHIBITION AT TURIN.

The first exhibition held in Italy specially devoted to the art of building will be opened in Turin on 8 April and will last to 21 May 1922. The exhibition will be held during the meeting of the National Congresses of Italian Engineers and of the Association for the Study of Building Materials. It has been organised by a group of engineers, architects, and constructors, with the assistance of the Government and the local authorities of Turin. In addition to the exhibition of building materials and methods of construction, there will be a special annexe devoted to plans and models of buildings and of furnished houses. The exhibition will be held in the Stadium in the Corso Vinzaglio.

## Members' Column

### PERSONAL.

MR. A. A. HUDSON, K.C., of 5, Paper Buildings, Temple, E.C., and 44, Mount Street, W., desires it to be known that he has not recently or at any time been a Candidate for the London County Council, and that he is the only K.C. of that surname who has been called within the Bar in England.

### ASSISTANT WANTED.

ASSISTANT wanted in Architectural Department, with experience in drainage schemes for large buildings, such as Hotels, Stations, etc., and having knowledge of Railway work; should be A.R.I.B.A. Permanency to suitable man. Must be good surveyor. Salary £350 to £400 according to qualifications.—Apply Architect, North Eastern Railway, York, by 31 March.

### PARTNERSHIPS.

AN ASSOCIATE, 39 years of age, is desirous of a Partnership or appointment as Assistant with a view to Partnership. Special experience in schools, hospitals, commercial and domestic work. Previously engaged as a County School Architect. London or Home Counties preferred. Highest credentials and references.—Apply Box 809, c/o Secretary R.I.B.A., 9 Conduit Street, W.

A.R.I.B.A. desires a share in well-established Practice, Provinces preferred. Would like to supervise or commence a Provincial Practice in connection with one already established in London. Age 31. Six years' office experience (general practice) and two years School of Architecture, University College, London. War Service.—Box No. 1732, c/o Secretary R.I.B.A., 9 Conduit Street, W.

### MESSRS. MILLS & MURGATROYD.

MR. ARTHUR J. MURGATROYD has taken Mr. James Hembrow, A.R.I.B.A., into partnership. The firm will be carried on under the old style of Mills & Murgatroyd, practising at 23 Strutt Street, Manchester, as architects and surveyors.

### MESSRS. J. HATCHARD-SMITH & SON.

MESSRS. J. HATCHARD-SMITH & SON have moved their offices to 11 Haymarket, S.W., the lease of their offices at 6 Duke Street, Adelphi, W.C., having expired on 25 March.

### APPOINTMENTS WANTED.

A.R.I.B.A., ex-officer, 37, married, two children; fifteen years' experience. Engaged as Assistant Architect by Ministry of Health on Housing for over two years. Now under notice to terminate engagement owing to reduction of staff. Present salary £500. London area preferred.—Apply Box 1032, c/o The Secretary R.I.B.A., 9 Conduit Street, W.

ASSOCIATE, disengaged, desires appointment as Responsible Draughtsman. Twenty years' all-round experience in Glasgow, London, Toronto, and Birmingham. Fully qualified in design, construction, details, supervision, quantities, perspectives.—Apply Box 9322, c/o Secretary R.I.B.A., 9 Conduit Street, London, W.

A.R.I.B.A., age 31, shortly disengaged, twelve years' varied experience (exclusive of four years' war service), desires Responsible Post, or with a view to Partnership. University architectural training with distinctions; used to best class work. Excellent references include three years Chief Assistant.—Write Box 473, c/o Secretary R.I.B.A., 9 Conduit Street, W.

F.R.I.B.A., with connection of twenty years' standing pre-war, six years' war service, competition expert, wishes to join busy Firm with a view to Partnership; this country or abroad.—Apply Box 1632, c/o Secretary R.I.B.A., 9 Conduit Street, W.

A.R.I.B.A., 26, desires post as Assistant; town or country. Working drawings, details, surveys, quantities. Sound practical knowledge in all branches. Highest references.—Apply Box 745, c/o Secretary R.I.B.A., 9 Conduit Street, W.

A.R.I.B.A. desires responsible position. Nearly twenty years' experience on banks, offices, shops, warehouses, flats, hotels, hospitals, baths, housing and domestic work. Used to charge of office and works building.—Box 2032, c/o Secretary R.I.B.A., 9 Conduit Street, London, W.

LICENTIATE R.I.B.A., 20 years' London experience, desires architectural work of any description. Own or employer's office. Whole or part time. Good designer and draughtsman and used to responsibility.—Apply Box 203, c/o Secretary R.I.B.A., 9 Conduit Street, W.

## Minutes XIII

### SESSION 1921-22.

At the Tenth General Meeting (Ordinary) of the Session 1921-1922, held on Monday, 20 March 1922, at 8 p.m.—Mr. Paul Waterhouse, President, in the chair. The attendance book was signed by 23 Fellows (including 7 members of the Council), 21 Associates (including 2 members of the Council), 2 Licentiates, and a large number of visitors. The Minutes of the Ninth Meeting held on 6 March, having been taken as read, were confirmed and signed.

The Hon. Secretary announced the decease of the following members: Mr. Herbert A. Satchell, elected *Associate* 1888, *Fellow* 1906, Royal Institute Essay Medallist 1888, Hon. Secretary of the Practice Standing Committee 1909-1915; Lieutenant-Colonel G. E. Holman, elected *Fellow* 1921; Mr. V. A. Edlin, elected *Licentiate* 1911; Mr. H. A. Emmett, elected *Licentiate* 1911; Mr. J. M. H. Vasey, elected *Licentiate* 1912; Mr. R. G. Elwes, elected *Licentiate* 1911. The Hon. Secretary also announced that the news had just been received of the sudden death of Mr. J. H. Sabin, President of the Surveyors' Institution. It was RESOLVED that the regrets of the Institute for the loss of these gentlemen be recorded on the Minutes of the Meeting and that a message of condolence and sympathy be conveyed to their relatives.

Mr. H. D. Searles-Wood [F.J., Vice-President, having read a paper entitled "The Building Timbers of the Empire," a discussion ensued, and on the motion of the Right Hon. Sir Joseph Cook, G.C.M.G., High Commissioner for the Commonwealth of Australia, seconded by Professor Wyndham R. Dunstan, C.M.G., F.R.S., Director of the Imperial Institute, a vote of thanks was passed to Mr. Searles-Wood by acclamation, and was briefly responded to. The proceedings closed at 10.5 p.m.

